

Four new species from China and Southeast Asia (Diptera, Lauxaniidae, Homoneurinae)

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Four new species from China and Southeast Asia (Diptera, Lauxaniidae, Homoneurinae). - Four new species are described and illustrated, including *Cestrotus quadrimaculatus* sp. n., *Dioides merzi* sp. n., *Noonamyia bipunctata* sp. n. and *Noonamyia flavoscutellata* sp. n., and seven species are recorded for the first time from Vietnam, Thailand, Philippines and/or Malaysia, including *Cestrotus flavoscutellatus* Meijere, 1910, *Cestrotus liui* Shi, Yang & Gaimari, 2009, *Cestrotus heteropterus* Shi, Yang & Gaimari, 2009, *Dioides furcatus* Shi & Yang, 2009, *Dioides incurvatus* Shi & Yang, 2009, *Noonamyia sabahna* Sasakawa & Pong, 1990, *Noonamyia sasakawai* Papp, in Papp, Merz & Földvári, 2006 and *Phobeticomyia uncinata* Shi & Yang, 2009. The species *Noonamyia sasakawai* is redescribed and illustrated completely according to two paratypes and several additional specimens. A key to all species of the genus *Noonamyia* of the world is presented.

Keywords: Lauxaniidae - Homoneurinae - new species - key - Southeast Asia.

INTRODUCTION

The family Lauxaniidae is one of the larger Acalyprtratae families. There are more than 160 genera and nearly 2000 described species, distributed worldwide except for Antarctica. The following four genera, which belong to the subfamily Homoneurinae, *Cestrotus* Loew, 1862, *Dioides* Kertész, 1915, *Noonamyia* Stuckenberg, 1971 and *Phobeticomyia* Kertész, 1915 have conspicuous wing patterns. The genus *Cestrotus* includes 11 described species in the Oriental Region and 13 in the Afro-tropical Region; the genus *Dioides* includes 6 described species in the Oriental Region and 1 in the Australasian/Oceanian Region; the genera *Noonamyia* and *Phobeticomyia* are represented by 12 and 6 described species respectively, distributed exclusively in the Oriental Region (Shi, Yang & Gaimari, 2009; Shi, Li & Yang, 2009a, 2009b; Shi & Yang, 2009).

In the present paper, four new species are described and illustrated, namely *Cestrotus quadrimaculatus* sp. n., *Dioides merzi* sp. n., *Noonamyia bipunctata* sp. n. and *Noonamyia flavoscutellata* sp. n., and seven species are recorded for the first time from Vietnam, Thailand, Philippines and/or Malaysia: *Cestrotus liui* Shi, Yang & Gaimari, 2009, *Cestrotus heteropterus* Shi, Yang & Gaimari, 2009, *Dioides furcatus* Shi, Li & Yang, 2009, *Dioides incurvatus* Shi, Li & Yang, 2009, *Noonamyia sabahna* Sasakawa & Pong, 1990, *Noonamyia sasakawai* Papp, in Papp, Merz & Földvári, 2006 and *Phobeticomyia uncinata* Shi, Li & Yang, 2009. The species *Noonamyia sasakawai* is redescribed and illustrated completely based on two paratypes and additional specimens, and a key to separate all species of the genus *Noonamyia* is presented.

MATERIAL AND METHODS

The specimens examined are deposited in the following collections:

- BMNH The Natural History Museum, London, UK
 BPBM Bernice P. Bishop Museum, Honolulu, Hawai'i, USA
 CASC California Academy of Sciences, San Francisco, California, USA
 CAUC Entomological Museum of China Agricultural University, Beijing, China
 CNCI Canadian National Collection of Insects, Ottawa, Ontario, Canada
 CSCA California State Collection of Arthropods, Sacramento, California, USA
 HNHM Hungarian Natural History Museum, Budapest, Hungary
 MHNG Muséum d'histoire naturelle, Genève, Switzerland
 MZSP Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil
 NHMW Naturhistorisches Museum Wien, Vienna, Austria
 NMSA KwaZulu-Natal Museum, Pietermaritzburg, South Africa
 QSBG Queen Sirikit Botanic Garden, Chiangmai, Thailand
 USNM National Museum of Natural History, Washington, DC, USA
 ZISP Zoological Institute, Russian Academy of Sciences, St Petersburg, Russia

Terminology follows McAlpine (1981) and Shewell (1987). Genitalia preparations were made by removing and macerating the apical portion of the abdomen in cold saturated NaOH for 2-6 hours. After examination, genitalia were transferred to fresh glycerin and stored in a microvial pinned below the specimen.

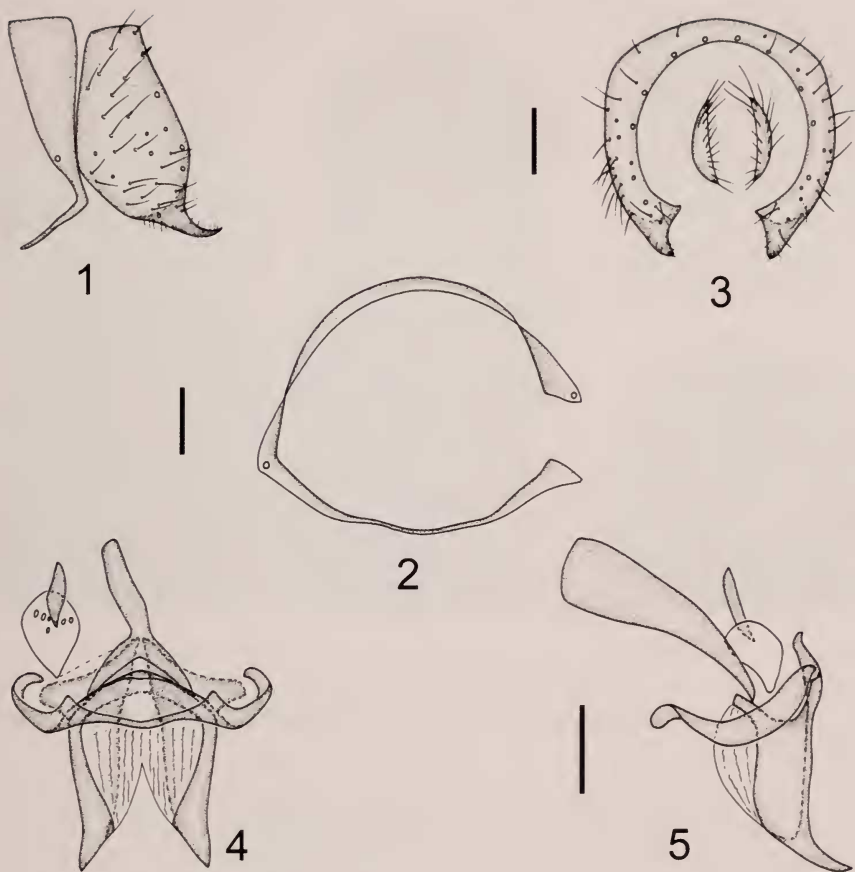
The following abbreviations are used: *a* - anterior seta, *acr* - acrostichal seta, *ad* - anterior dorsal seta, *anepst* - anepisternal seta, *app* - apical posterior seta, *apv* - apical ventral seta, *av* - anterior ventral seta, *dc* - dorsocentral seta, *kepst* - katepisternal seta, *oc* - ocellar seta, *or* - fronto-orbital seta, *pd* - posterior dorsal seta, *prsc* - prescutellar seta, *pv* - posterior ventral seta, *sa* - supra-alar seta.

SYSTEMATIC PART

Cestrotus quadrimaculatus sp. n.

Figs 1-5, Plates A1, A3, B1

MATERIAL: HOLOTYPE ♂ (MHNG): Thailand, Kamphaeng Phet Province, KhlongLan District, nr KhlongLan Watf., 280 m, 16.07.51N/99.16.41E, 11-12.XII.2003, P. Schwendinger. **PARATYPES:** **THAILAND.** - **Chaiyaphum Province,** Pa Hin Ngam NP, deciduous, 15°39.966'N 101°27.198'E, 357 m, 19-23.xii.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1352) (1♂, QSBG). - Pa Hin Ngam NP, deciduous, 15°40.232'N 101°26.942'E, 398 m, 5-12.xii.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai



FIGS 1-5

Cestrotus quadrimaculatus sp. n., male paratype. (1) Epiandrium and protandrium, lateral view. (2) Protandrium, anterior view. (3) Epiandrium, posterior view. (4) Aedeagal complex, ventral view. (5) Aedeagal complex, lateral view. Scale 0.1 mm.

(T1345) (2♂♂, 2♀♀, CSCA). – Pa Hin Ngam NP, Dry dipterocarp, 15°38.099'N 101°23.921'E, 698 m, 11-18.viii.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T445) (1♂, BPBM). – Pa Hin Ngam NP, Dry evergreen forest at waterfall, 15°34.802'N 101°25.99'E, 430 m, 22-28.xi.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1038) (1♂, 1♀, CSCA). – Pa Hin Ngam NP, Dry evergreen forest at waterfall, 15°34.802'N 101°25.99'E, 430 m, 16-22.xi.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1035) (1♂, 3♀♀, CSCA). – Pa Hin Ngam NP, Dry evergreen next to creek, 15°40.569'N 101°26.705'E, 461 m, 19-23.xii.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1353) (3♂♂, 1♀, QSBG). – Pa Hin Ngam NP, ecotone between mix deciduous and dipterocarp forest, 15°38.132'N 101°23.922'E, 698 m, 7-13.ii.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1646) (1♂, QSBG). – Pa Hin Ngam NP, Ecotone between mixed deciduous and dry dipterocarp forest, 15°34.913'N 101°25.658'E, 444 m, 16-22.xi.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1034) (1♂, 1♀, CNCI). – Pa Hin Ngam NP, Ecotone between mixed deciduous and dry dipterocarp forest, 15°34.913'N 101°25.658'E, 444 m, 10-16.xi.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1031) (1♀, USNM).



PLATE A

Head, anterior view and thorax, dorsal view. (1), (3) *Cestrotus quadrimaculatus* sp. n. (2), (4) *Dioides merzi* sp. n.

– Pa Hin Ngam NP, Mixed deciduous forest, 15°34.686'N 101°26.082'E, 419 m, 22-28.xi.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1039) (1♂, CSCA). – Pa Hin Ngam NP, Nature trail at Lan Hin Nor, 15°37.615'N 101°23.436'E, 668 m, 15-21.iii.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T2331) (1♀, USNM). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dry evergreen, 15°38.438'N 101°23.576'E, 780 m, 7-13.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1457) (1♂, 1♀, BMNH). – Tat Tone NP, By the stream, 15°58.771'N 102°2.397'E, 305 m, 19-26.i.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T1564) (1♂, QSBG). – Tat Tone NP, Chaiyapoom forest fire station, 16°0.738'N 102°1.342'E, 195 m, 26.xii.2006-2.i.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T1377) (1♂, USNM). – Tat Tone NP, Dry Dipterocarp Forest, 15°59.037'N 102°2.103'E, 250 m, 25-27.vi.2006, ex. Malaise trap, coll: M. Sharkey (T10) (1♀, BPBM). – Tat Tone NP, Lum pa tao head water/dry evergreen, 15°58.486'N 102°2.239'E, 270 m, 19-26.ii.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T1733) (1♂, QSBG). – Tat Tone NP, Phu hang sing, 15°58.723'N 102°2.231'E, 290 m, 26.i.-2.ii.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T1569) (1♂, QSBG). – Tat Tone NP, Streamside at Tat Fah waterfall, 15°56.463'N 102°5.953'E, 242 m, 26.iii.-2.iv.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T2355) (2♂♂, 1♀, BPBM). – Tat Tone NP, Streamside at Tat Fah waterfall, 15°56.463'N 102°5.953'E, 242 m, 5-12.iii.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T2346) (2♀♀, QSBG). – **Chiang Mai Province**, Doi Inthanon NP, Vachirathan Fall, 18°32.31'N 98°36.048'E, 700 m, 15-22.iv.2007, ex. Malaise trap, coll: Y. Areeluck (T1842) (1♀, CSCA). – **Kamphaeng Phet Province**, data same as holotype (1♂, CAUC). – **Khonkaen Province**, Nam Pong NP, office, 16°37.341'N 102°34.467'E, 324 m, 19-26.vii.2006, ex. Malaise trap, coll: Khamphol Jaidee (T109) (1♂, QSBG). – Nam Pong NP, office, 16°37.377'N 102°34.454'E, 344 m, 19-26.vii.2006, ex. Malaise trap, coll: Khamphol Jaidee (T111) (1♂, QSBG). – **Loei Province**, Phu Kradueng NP, Forest protection unit Loei .5

(Phakbung), 16°50.54'N 101°41.663'E, 406 m, 25.ii.-1.iii.2007, ex. Malaise trap, coll: Sonkgran Kamtue (T1505) (2♂♂, CSCA; 2♀♀, QSBG). – Phu Kradueng NP, Forest protection unit Loei .5 (Phakbung), 16°50.54'N 101°41.663'E, 406 m, 7-13.ii.2007, ex. Malaise trap, coll: Sutin Khonglasae (T1496) (1♂, 1♀, QSBG; 2♀♀, CSCA). – **Phetchabun Province**, Khao Kho NP, Mix deciduous, 16°39.589'N 101°8.185'E, 168 m, 5-12.i.2007, ex. Malaise trap, coll: Somchai Chachumnan & Saink Singtong (T1392) (1♂, USNM). – Khao Kho NP, Mix deciduous, 16°39.589'N 101°8.185'E, 168 m, 19-26.i.2007, ex. Malaise trap, coll: Somchai Chachumnan & Saink Singtong (T1398) (1♂, QSBG). – Khao Kho NP, Mix deciduous near office, 16°39.587'N 101°8.134'E, 220 m, 26.ii.2007, ex. Malaise trap, coll: Somchai Chachumnan & Saink Singtong (T1608) (1♀, CNCI). – Khao Kho NP, office, 16°39.479'N 101°8.105'E, 220 m, 12-19.vii.2006, ex. Malaise trap, coll: Somchai Chachumnan & Sa-ink Singtong (T166) (1♂, USNM). – Khao Kho NP, View point at Khla Stream, 16°39.12'N 101°7.81'E, 246 m, 12-19.iii.2007, ex. Malaise trap, coll: Somchai Chachumnan & Saink Singtong (T2413) (3♀♀, QSBG; 1♀, BPBM). – Sakon Nakhon Province, Phu Phan NP, Nam Hom Waterfall # Sao Hi, 17°7.34'N 104°0.788'E, 344 m, 25-31.iii.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T2377) (1♂, 1♀, USNM). – Phu Phan NP, North of well, 17°3.543'N 103°58.452'E, 312 m, 23-30.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1525) (2♂♂, 1♀, USNM). – Phu Phan NP, West of well, 17°3.521'N 103°58.45'E, 322 m, 5-11.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1517) (2♂♂, 1♀, CNCI). – Phu Phan NP, West of well, 17°3.521'N 103°58.45'E, 322 m, 17-23.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1523) (1♂, 1♀, NHMW). – Phu Phan NP, West of well, 17°3.521'N 103°58.45'E, 322 m, 23-30.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1526) (1♀, QSBG). – **Ubon Ratchathani Province**, Pha Taem NP, Saeng Chan Waterfall, 15°31.985'N 105°35.774'E, 155 m, 12-20.iii.2007, ex. Malaise trap, coll: Porntip Tonsu & Bunlu Sapsiri (T2146) (1♀, QSBG). **VIETNAM**. – **Tay Ninh Province**, Nui Ba Den, 300 m, 11.22N/106.11E, 20-21.VIII.2003, P. Schwendinger (1♀, MHNG; 1♂, CAUC).

ETYMOLOGY: Latin, *quadri-*, prefix meaning four + *maculatus*, meaning maculate or with spots, referring to the face having a pair of pale brown subbasal spots and a pair of blackish brown round subapical spots; a masculine adjective.

DIAGNOSIS: Face with a pair of pale brown subbasal spots and a pair of blackish brown round subapical spots. Antennal 1st flagellomere entirely yellow. Palpus yellow. Mesonotum with a pair of grayish brown median stripes, a pair of grayish brown sub-lateral stripes along upper margin of *sa* and a pair of brownish gray lateral stripes behind suture. Scutellum yellow with dense yellow pruinosity. All legs yellow, femora with a grayish black apicoventral spot, tibiae with a subbasal and apical black ring and tarsomeres 3-5 brown. Wing with a wide, brown, subapical stripe from costal margin to hind margin; a hyaline elliptical spot on M_1 present between *r-m* and *dm-cu*; *r-m* and *dm-cu* brown. Abdomen brown to black with dense gray pruinosity, some tergites with yellow laterally.

DESCRIPTION

Length: body 3.5-4.0 mm (male), 4.0 mm (female); wing 3.4-3.7 mm (male), 3.7 mm (female).

Head (Plates A1, A3) pale yellow. Frons as long as wide and parallel-sided, with dense pale yellow pruinosity; with a pair of black velvety triangular spots, covering base of anterior *or* and a median hump slightly projecting anteriorly; ocellar triangle grayish black, with 3 rows of short setulae on grayish median stripe behind ocellar triangle; *oc* strong and longer than anterior *or*; anterior *or* reclinate, shorter than posterior *or*. Face covered by sparse white pruinosity, with a pair of pale brown subbasal spots, a pair of blackish brown subapical spots and three dark spots on ventral

margin. Gena about 1/4 height of eye, with 1 long seta and a black spot. Antennal scape and pedicel grayish black, 1st flagellomere entirely yellow, nearly 1.8 times as long as high; arista brown, long plumose, with longest setula as long as height of 1st flagellomere. A pale brown spot present between antenna and eye. Proboscis yellow, except pale brown at tip, with yellowish and blackish setulae; palpus yellow, with blackish setulae.

Thorax (Plate A3) black, with dense grayish and yellowish pruinosity. Mesonotum with a pair of grayish brown median stripes, a pair of grayish brown sub-lateral stripes along upper margin of *sa*, a pair of brownish gray lateral stripes behind suture and a black rectangular spot on postpronotum; 0+2 *dc*; *acr* in irregular 8 rows; *prsc* longer than 1st postsutural *dc*. 1 *anepst*, 2 *kepst*. Scutellum yellow, with dense yellow pruinosity. Halter pale yellow.

Legs yellow, all femora with sparse grayish pruinosity and a grayish black apicoventral spot, all tibiae with a subbasal and apical black ring and tarsomeres 3-5 brown. Fore femur with 4-5 *pv* and 5-6 *pd*, ctenidium with 12 short setulae; fore tibia with 1 preapical *ad* and 1 short *apv*. Mid femur with 5 *a*; mid tibia with 1 preapical *ad* and 2 strong *apv*. hind tibia with 1 short preapical *ad* and 1 short *apv*.

Wing (Plate B1) hyaline, with brown irregular spots; a wide brown subapical stripe extending from costal margin to hind margin; an hyaline elliptical spot on M_1 present between *r-m* and *dm-cu*; *r-m* and *dm-cu* brown; subcostal cell hyaline, with a pale brown round apical spot, extending nearly to R_{2+3} ; Costa with 2nd (between R_1 and R_{2+3}), 3rd (between R_{2+3} and R_{4+5}) and 4th (between R_{4+5} and M_1) sections in proportion of 1.7 mm : 0.6 mm : 0.3 mm; *r-m* beyond middle of distal cell; ultimate and penultimate sections of M_1 in proportion of 1.1 mm : 2.0 mm; ultimate section of CuA_1 about 1/13 of penultimate.

Abdomen brown to black, with dense gray pruinosity, some tergites with yellow laterally. Male genitalia (Figs 1-5): protandrium circular; epandrium broad in lateral view; surstylus with an acute process, curved upward; hypandrium broad at middle and curved backward, hypandrial apodeme small; aedeagus with a pair of triangular basal processes, a deep apical incision, subuliform apically in ventral view and curved backward in lateral view.

REMARKS: The new species is similar to *Cestrotus pilosus* (Hendel) from Tanzania. According to the original description by Hendel (1920) and study of the type, they share the following characters: face with white pruinosity and brown spots, antennal scape and pedicel grayish black, 1st flagellomere yellow, mesonotum with *acr* in 8 rows, wing broadly brown in apical third. But it can be separated from the latter by the pruinose brown stripe behind the ocellar triangle flanked on both sides by solid yellow pruinose upper frons, the mesonotum having a pair of grayish brown median stripes and a pair of short brownish gray lateral stripes separated completely, the scutellum having grayish yellow pruinosity, and the distal margin of the wing being hyaline. In *Cestrotus pilosus*, the area behind the ocellar triangle is concolorous with the upper frons, the mesonotum has four brown stripes confluent on the anterior half and isolated on the posterior half, the scutellum is bright yellow pruinose, the distal margin of the wing is completely brown with no marginal hyaline area, and other details of the wing differ.

DISTRIBUTION: Thailand, Vietnam.

Cestrotus flavoscutellatus Meijere, 1910

Cestrotus flavoscutellatus Meijere, 1910: 142. Type locality: Indonesia (Java).

MATERIAL: **THAILAND**. – **Loei Province**, Phu Ruea NP, Nern Wibaak ditch, 17°29.907'N 101°20.483'E, 1196 m, 19-26.ii.2007, ex. Malaise trap, coll: Patikhom Tumtip (T1711) (1♂, QSBG).

DISTRIBUTION: China (Guangxi, Hainan, Hunan, Taiwan), Laos, Nepal, Indonesia (Java), Malaysia (Sabah), Vietnam, new record to Thailand.

Cestrotus liui Shi, Yang & Gaimari, 2009

Cestrotus liui Shi, Yang & Gaimari, 2009: 57. Type locality: China (Yunnan).

MATERIAL: **MALAYSIA**. – **Pahang**, Bukit Fraser, Maxwell Trail, 1300 m, 3.43N/101.44E, 12-16.V.2004, P. Schwendinger (2♂♂, 1♀, MHNG; 1♂, CAUC). **THAILAND**. – **Loei Province**, Phu Kradueng NP, Savannah in pine forest, 16°53.092'N 101°47.413'E, 1257 m, 9-16.i.2007, ex. Malaise trap, coll: Thanongsak Srisa-ad (T1226) (1♂, QSBG).

DISTRIBUTION: China (Hainan, Yunnan), new records to Malaysia and Thailand.

Cestrotus heteropterus Shi, Yang & Gaimari, 2009

Cestrotus heteropterus Shi, Yang & Gaimari, 2009: 54. Type locality: China (Yunnan).

MATERIAL: **MALAYSIA**. – **Kelantan**, Gua Keris, Gua King Kong, South Pahang, 130 m, 52.1N/102.01E, 8-9.VI.2004, P. Schwendinger (1♂, MHNG). **THAILAND**. – **Chaiyaphum Province**, Pa Hin Ngam NP, Car park at Thung Dok Kra Jeow, 15°38.391'N 101°23.609'E, 750 m, 7-13.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1456) (3♂♂, 1♀, USNM). – Pa Hin Ngam NP, Car park at Thung Dok Kra Jeow, 15°38.391'N 101°23.609'E, 750 m, 19-25.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1462) (1♀, QSBG). – Pa Hin Ngam NP, deciduous, 15°39.966'N 101°27.198'E, 357 m, 11-12.xii.2006, ex. pan trap, coll: Katae Sa-nog & Buakaw Adnafai (T1344) (1♀, CNCI). – Pa Hin Ngam NP, Dry evergreen next to creek, 15°40.569'N 101°26.705'E, 461 m, 19-23.xii.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1353) (1♀, CSCA). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dipterocarpus forest, 15°38.208'N 101°23.556'E, 720 m, 19-25.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1464) (3♂♂, 2♀♀, QSBG; 1♀, BPBM). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dipterocarpus forest, 15°38.208'N 101°23.556'E, 720 m, 7-13.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1458) (3♂♂, QSBG). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dry evergreen, 15°38.438'N 101°23.576'E, 780 m, 3-4.i.2007, ex. pan trap, coll: Katae Sa-nog & Buakaw Adnafai (T1448) (1♂, CSCA). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dry evergreen, 15°38.438'N 101°23.576'E, 780 m, 4-5.i.2007, ex. pan trap, coll: Katae Sa-nog & Buakaw Adnafai (T1449) (1♂, 1♀, USNM). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dry evergreen, 15°38.438'N 101°23.576'E, 780 m, 19-25.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1463) (1♂, QSBG). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dry evergreen, 15°38.438'N 101°23.576'E, 780 m, 2-3.i.2007, ex. pan trap, coll: Katae Sa-nog & Buakaw Adnafai (T1447) (1♂, 3♀♀, CSCA). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dry evergreen, 15°38.438'N 101°23.576'E, 780 m, 5-6.i.2007, ex. pan trap, coll: Katae Sa-nog & Buakaw Adnafai (T1450) (1♀, QSBG). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dry evergreen, 15°38.438'N 101°23.576'E, 780 m, 7-13.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1457) (2♂♂, 3♀♀, QSBG). – Tat Tone NP, Dry Dipterocarp Forest, 15°59.037'N 102°2.103'E, 250 m, 25-27.vi.2006, ex. Malaise trap, coll: M. Sharkey (T10) (1♂, QSBG). – Tat Tone NP, Dry dipterocarp forest near swamp at Sab somboon forest unit, 16°1.059'N 101°58.603'E, 674 m, 26.xi.-3.xii.2006, ex. Malaise trap, coll: Tawit Jaruphan (T1146) (1♀, USNM). – Tat Tone NP, Lum pa tao head water/dry evergreen, 15°58.486'N 102°2.239'E, 270 m, 19-26.ii.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T1733) (2♀♀, USNM). – Tat Tone NP, Next to Pa Eang waterfall, 15°57.657'N 101°54.724'E, 301 m,

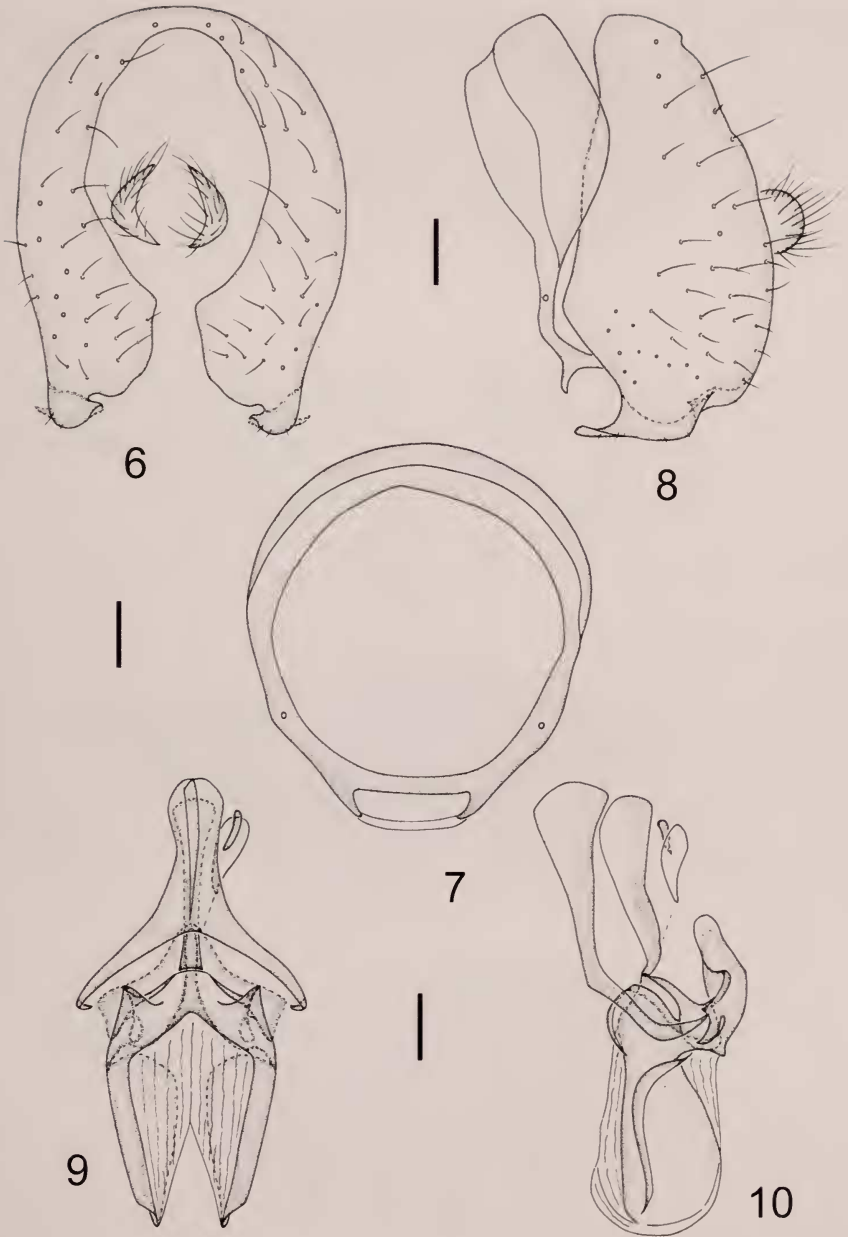
19-26.x.2006, ex. Malaise trap, coll: Tawit Jaruphan (T685) (1♂, QSBG). – Tat Tone NP, Streams side at Tat Fah waterfall, 15°56.463'N 102°5.953'E, 242 m, 5-12.iii.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T2346) (1♂, USNM). – **Chiang Rai Province**, Doi Inthanon NP, summit marsh, 18°35.361'N 98°29.157'E, 2500 m, 12-19.x.2006, ex. Malaise trap, coll: Y. Areeluck (T368) (1♂, QSBG). – Mae Si District, Doi Tung, 1300 m, 20.19.28N/99.49.53E, 17.XII.2003, P. Schwendinger (3♂♂, MHNG). – **Chumphon Province**, Lang Suan District, Khao Kai Jae. waterf., 80 m, 9.55N/98.57E, 17-18.VII.2002, P. Schwendinger (6♂♂, 2♀♀, MHNG). – Loei Province, Phu Kraeueng NP, Forest protection unit Loei .5 (Phakbung), 16°50.493'N 101°41.726'E, 412 m, 7-13.ii.2007, ex. Malaise trap, coll: Sutin Khonglasae (T1497) (4♂♂, 4♀♀, QSBG; 2♂♂, 1♀, CSCA; 2♂♂, 1♀, USNM; 2♂♂, 1♀, BMNH; 2♂♂, 1♀, BPBM; 2♂♂, 1♀, CNCI; 2♂♂, 1♀, MHNG; 2♂♂, 1♀, MZSP; 2♂♂, 1♀, NHMW; 2♂♂, 1♀, NMSA). – Phu Kraeueng NP, Forest protection unit Loei .5 (Phakbung), 16°50.54'N 101°41.663'E, 406 m, 13-19.ii.2007, ex. Malaise trap, coll: Wuthicahi kwanjam (T1499) (4♂♂, 4♀♀, CSCA). – Phu Kraeueng NP, Forest protection unit Loei .5 (Phakbung), 16°50.54'N 101°41.663'E, 406 m, 13-19.ii.2007, ex. Malaise trap, coll: Wuthicahi kwanjam (T1499) (3♂♂, 2♀♀, QSBG; 2♂♂, CSCA; 1♀, BMNH; 1♀, MHNG; 1♀, MZSP; 1♀, NHMW; 1♀, NMSA). – Phu Kraeueng NP, Forest protection unit Loei .5 (Phakbung), 16°50.54'N 101°41.663'E, 406 m, 7-13.ii.2007, ex. Malaise trap, coll: Sutin Khonglasae (T1496) (3♂♂, 1♀, USNM; 5♂♂, CSCA; 1♀, BPBM; 1♀, CNCI). – Phu Kraeueng NP, Hill evergreen forest at Wang Guang forest unit, 16°53.362'N 101°47.286'E, 1262 m, 3-9.i.2007, ex. Malaise trap, coll: Thanongsak Srisa-ad (T1222) (1♂, CSCA). – Phu Kraeueng NP, Savannah in pine forest, 16°53.092'N 101°47.413'E, 1257 m, 9-16.i.2007, ex. Malaise trap, coll: Thanongsak Srisa-ad (T1226) (2♂♂, CNCI). – Phu Ruea NP, Nature trail, 17°30.74'N 101°20.65'E, 1353 m, 5-12.iii.2007, ex. Malaise trap, coll: Patikhom Tumtip (T2305) (1♀, QSBG). – **Phetchabun Province**, Khao Kho NP, Mixed deciduous forest, 16°32.539'N 101°2.483'E, 524 m, 11-12.xii.2006, ex. pan trap, coll: Somchai Chachumnan & Saink Sington (T1177) (1♀, QSBG). – Phitsanulok Province, Thung Salaeng Luang NP, Dry Evergreen forest, 16°50.277'N 100°52.917'E, 486 m, 18-25.iii.2007, ex. Malaise trap, coll: Pongpitak & Pranee & Sathit (T2388) (1♀, BPBM). – Sakon Nakhon Province, Phu Phan NP, Behind forest protection unit at Huay Wien Prai, 17°6.81'N 104°0.318'E, 318 m, 25.ii.-3.iii.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1693) (1♂, 1♀, CSCA). – Phu Phan NP, Behind forest protection unit at Huay Wien Prai, 17°6.847'N 104°0.302'E, 376 m, 4-10.ii.2007, ex. Malaise trap, coll: Winlon Kongnara (T1685) (1♂, BPBM). – Phu Phan NP, Dry evergreen forest near house at 1567 station, 16°48.628'N 103°53.591'E, 522 m, 22-29.xii.2006, ex. Malaise trap, coll: S. Kongnara (T1250) (1♀, QSBG). – Phu Phan NP, Nam Hom Waterfall # Sao Hi, 17°7.34'N 104°0.788'E, 344 m, 10-17.iii.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T2371) (1♀, CNCI). – Phu Phan NP, North of well, 17°3.543'N 103°58.452'E, 312 m, 5-11.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1516) (1♀, QSBG). – Phu Phan NP, West of well, 17°3.521'N 103°58.45'E, 322 m, 11-17.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1520) (1♂, BPBM). – Phu Phan NP, West of well, 17°3.521'N 103°58.45'E, 322 m, 5-11.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1517) (2♂♂, 3♀♀, USNM). – Phu Phan NP, West of well, 17°3.521'N 103°58.45'E, 322 m, 23-30.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1526) (1♀, QSBG). – Phu Phan NP, West of well, 17°3.521'N 103°58.45'E, 322 m, 17-23.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1523) (2♂♂, 1♀, QSBG). – **Sunat Thanai Province**, Khao Sok National Park, 100 m, 8.54.55N/98.31.39E, 12-14.V.2003, P. Schwendinger (1♂, MHNG). – **Trat Province**, Ko Chang, 12.03N/102.18E, 17-18.VII.2002, P. Schwendinger (1♀, MHNG). **VIETNAM**. – **Dong Nai Province**, NW Tan Phu, 130 m, 11.25N/107.26E, 26-29.VIII.2003, P. Schwendinger (1♀, MHNG). – **Lam Dong Province**, W Di Linh, Bo Bia Wat. Fall, 860 m, 11.34N/ 108.01E, 03.IX.2003, P. Schwendinger (1♀, CAUC). – **Tay Ninh Province**, Tay Ninh, Nui Ba Den, 300 m, 11.22N/106.11E, 20-21.VIII.2003, P. Schwendinger (8♂♂, 3♀♀, MHNG; 1♂, CAUC).

DISTRIBUTION: China (Yunnan), Thailand, new records to Malaysia and Vietnam.

Dioides merzi sp. n.

Figures 6-10, Plates A2, A4, B2

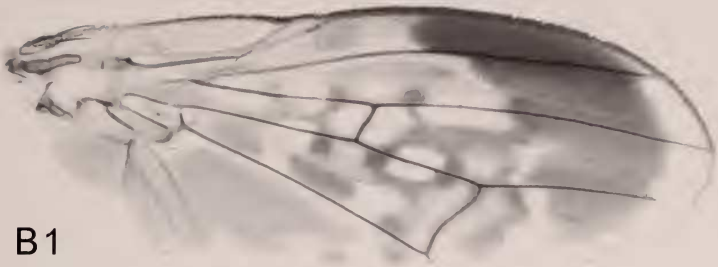
MATERIAL: HOLOTYPE ♂ (MHNG): Vietnam, Tay Ninh Province, Tay Ninh, Nui Ba Den, 300 m, 11.22N/106.11E, 20-21.VIII.2003, P. Schwendinger. PARATYPES: **THAILAND**. –



FIGS 6-10

Diodes merzi sp. n., male paratype. (6) Epandrium and protandrium, lateral view. (7) Protandrium, anterior view. (8) Epandrium, posterior view. (9) Aedeagal complex, ventral view. (10) Aedeagal complex, lateral view. Scale 0.1 mm.

Chaiyaphum Province, Pa Hin Ngam NP, Car park at Thung Dok Kra Jeow, 15°38.391'N 101°23.609'E, 750 m, 7-13.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1456) (1♂, 1♀, USNM). – Pa Hin Ngam NP, deciduous, 15°39.966'N 101°27.198'E, 357 m, 19-23.xii.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1352) (5♂♂, 5♀♀, CSCA; 2♂♂, 2♀♀, BMNH; 5♀♀, USNM). – Pa Hin Ngam NP, deciduous, 15°40.232'N 101°26.942'E, 398 m, 5-12.xii.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1345) (1♀, USNM). – Pa Hin Ngam NP, Dry dipterocarp, 15°38.099'N 101°23.921'E, 698 m, 11-18.viii.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T445) (1♀, USNM). – Pa Hin Ngam NP, Dry evergreen forest (Thepana waterfall), 15°38.884'N 101°25.84'E, 605 m, 1-7.x.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T658) (1♂, QSBG). – Pa Hin Ngam NP, Dry evergreen forest at Lan Hin Nor, 15°37.54'N 101°23.313'E, 673 m, 21-27.iii.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T2335) (1♀, QSBG). – Pa Hin Ngam NP, Dry evergreen forest at Lan Hin Nor, 15°37.54'N 101°23.313'E, 673 m, 9-15.iii.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T2329) (3♂♂, 3♀♀, QSBG). – Pa Hin Ngam NP, Dry evergreen forest at Lan Hin Nor, 15°37.54'N 101°23.313'E, 673 m, 15-21.iii.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T2332) (2♂♂, 2♀♀, QSBG; 1♂, 2♀♀, MHNG; 2♀♀, CNCI). – Pa Hin Ngam NP, Dry evergreen forest at waterfall, 15°34.802'N 101°25.99'E, 430 m, 16-22.xi.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1035) (6♂♂, 3♀♀, CSCA). – Pa Hin Ngam NP, Dry evergreen forest at waterfall, 15°34.802'N 101°25.99'E, 430 m, 22-28.xi.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1038) (2♂♂, 2♀♀, CSCA). – Pa Hin Ngam NP, Dry evergreen forest at waterfall, 15°34.802'N 101°25.99'E, 430 m, 10-16.xi.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1032) (1♀, CSCA). – Pa Hin Ngam NP, Dry evergreen next to creek, 15°40.569'N 101°26.705'E, 461 m, 19-23.xii.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1353) (2♂♂, 3♀♀, QSBG; 2♂♂, 3♀♀, CSCA). – Pa Hin Ngam NP, Ecotone between mixed deciduous and dry dipterocarp forest, 15°34.913'N 101°25.658'E, 444 m, 10-16.xi.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1031) (1♂, 2♀♀, CSCA). – Pa Hin Ngam NP, Ecotone between mixed deciduous and dry dipterocarp forest, 15°34.913'N 101°25.658'E, 444 m, 16-22.xi.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1034) (6♂♂, 8♀♀, CSCA; 2♂♂, 2♀♀, QSBG). – Pa Hin Ngam NP, Mixed deciduous forest, 15°34.686'N 101°26.082'E, 419 m, 22-28.xi.2006, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1039) (1♂, 2♀♀, CSCA). – Pa Hin Ngam NP, Nature trail at Lan Hin Nor, 15°37.615'N 101°23.436'E, 668 m, 15-21.iii.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T2331) (2♂♂, 4♀♀, QSBG; 1♂, 6♀♀, CSCA; 1♂, 6♀♀, USNM). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dipterocarpus forest, 15°38.208'N 101°23.556'E, 720 m, 7-13.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1458) (3♂♂, 1♀, CSCA). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dipterocarpus forest, 15°38.208'N 101°23.556'E, 720 m, 13-19.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1461) (1♂, 1♀, USNM). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dipterocarpus forest, 15°38.208'N 101°23.556'E, 720 m, 1-7.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1455) (1♂, NMSA). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dipterocarpus forest, 15°38.208'N 101°23.556'E, 720 m, 19-25.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1464) (2♂♂, 3♀♀, QSBG; 2♂♂, 2♀♀, NMSA; 2♂♂, 1♀, CASC). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dry evergreen, 15°38.438'N 101°23.576'E, 780 m, 19-25.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1463) (1♂, QSBG). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dry evergreen, 15°38.438'N 101°23.576'E, 780 m, 7-13.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1457) (2♂♂, 3♀♀, MZSP; 2♂♂, 2♀♀, ZISP). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dry evergreen, 15°38.438'N 101°23.576'E, 780 m, 13-19.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1460) (3♂♂, 3♀♀, QSBG). – Pa Hin Ngam NP, Thung Dok Kra Jeow in Dry evergreen, 15°38.438'N 101°23.576'E, 780 m, 7-13.i.2007, ex. Malaise trap, coll: Katae Sa-nog & Buakaw Adnafai (T1457) (5♂♂, 4♀♀, BPBM; 3♀♀, QSBG; 3♀♀, USNM). – Tat Tone NP, By the creek at Takfah waterfall, 15°56.463'N 102°5.953'E, 242 m, 26.ix.-3.x.2006, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T875) (1♀, MZSP). – Tat Tone NP, By the stream, 15°58.538'N 102°2.153'E, 280 m, 12-19.i.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T1562) (1♂, QSBG). – Tat Tone NP, By the stream, 15°58.771'N 102°2.397'E, 305 m, 12-19.i.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong



B1



B2



B3



B4

PLATE B

Wing. (1) *Cestrotus quadrimaculatus* sp. n. (2) *Dioides merzi* sp. n. (3) *Noonamyia bipunctata* sp. n. (4) *Noonamyia flavoscutellata* sp. n.

(T1561) (1 ♀, ZISP). – Tat Tone NP, Chaiyapoom forest fire station, 16°0.738'N 102°1.342'E, 195 m, 19-23.xii.2006, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T1374) (1 ♂, USNM). – Tat Tone NP, Chaiyapoom forest fire station, 16°0.738'N 102°1.342'E, 195 m, 26.xii.2006-2.i.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T1377) (1 ♂, QSBG). – Tat Tone NP, Dry Dipterocarp Forest, 15°59.037'N 102°2.103'E, 250 m, 21-28.vi.2006, ex. Malaise trap, coll: Vinlon Khongnara (T19) (1 ♀, BPBM). – Tat Tone NP, Dry Dipterocarp Forest, 15°59.037'N 102°2.103'E, 250 m, 28.vi.2006, ex. Malaise trap, coll: Pong Sandow (T18) (1 ♀, ZISP). – Tat Tone NP, Dry Dipterocarp Forest, 15°59.037'N 102°2.103'E, 250 m, 25-27.vi.2006, ex. Malaise trap, coll: M. Sharkey (T10) (1 ♀, CASC). – Tat Tone NP, Dry dipterocarp forest near swamp at Sab somboon forest unit, 16°1.059'N 101°58.603'E, 674 m, 26.xi.-3.xii.2006, ex. Malaise trap, coll: Tawit Jaruphan (T1146) (1 ♀, QSBG). – Tat Tone NP, Dry dipterocarp forest near swamp at Sab somboon forest unit, 16°1.059'N 101°58.603'E, 674 m, 12-19.xi.2006, ex. Malaise trap, coll: Tawit Jaruphan (T1140) (1 ♀, QSBG). – Tat Tone NP, Nursery near head water, 15°58.344'N 102°2.169'E, 257 m, 5-12.viii.2006, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T547) (1 ♀, QSBG). – Tat Tone NP, Phu hang sing, 15°58.723'N 102°2.231'E, 290 m, 26.i.2.ii.2007, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T1569) (1 ♀, CASC). – Tat Tone NP, Staff house at Takfah waterfall, 15°56.461'N 102°5.955'E, 242 m, 19-26.ix.2006, ex. Malaise trap, coll: Tawit Jaruphan & Orawan Budsawong (T873) (1 ♀, BPBM). – **Chiang Mai Province**, Doi Inthanon NP, summit marsh, 18°35.361'N 98°29.157'E, 2500 m, 12-19.x.2006, ex. Malaise trap, coll: Y. Areeluck (T368) (1 ♀, QSBG). – **Loei Province**, Phu Kradueng NP, Forest protection unit Loei .5 (Phakbung), 16°50.54'N 101°41.663'E, 406 m, 7-13.ii.2007, ex. Malaise trap, coll: Sutin Khonglasae (T1496) (1 ♂, QSBG). – Phu Kradueng NP, Koke Hin Ngam, 16°51.817'N 101°50.704'E, 270 m, 9-16.viii.2006, ex. Malaise trap, coll: Sutin Khonglasae (T483) (1 ♂, QSBG). – Phu Kradueng NP, Mixed deciduous forest north of Na Noy Forest Unit, 16°48.17'N 101°47.666'E, 276 m, 2-8.xii.2006, ex. Malaise trap, coll: Suthin Gong-lasae (T1084) (1 ♀, BPBM). – Phu Kradueng NP, Mixed deciduous forest south of Na Noy Forest Unit, 16°49.099'N 101°47.624'E, 275 m, 14-20.xi.2006, ex. Malaise trap, coll: Suthin Gong-lasae (T1074) (2 ♂ ♂, 2 ♀ ♀, CASC; 1 ♂, 1 ♀, USNM). – Phu Kradueng NP, Mixed deciduous forest south of Na Noy Forest Unit, 16°49.099'N 101°47.624'E, 275 m, 18-19.xi.2006, ex. pan trap, coll: Suthin Gong-lasae (T1070) (1 ♀, QSBG). – Phu Kradueng NP, Mixed deciduous forest south of Na Noy Forest Unit, 16°49.099'N 101°47.624'E, 275 m, 20-26.xi.2006, ex. Malaise trap, coll: Daorueng Sinhprecha (T1077) (1 ♂, CASC). – Phu Kradueng NP, Road to Ta Krong waterfall of Na Noy Forest Unit, 16°48.913'N 101°47.634'E, 265 m, 14-20.xi.2006, ex. Malaise trap, coll: Suthin Gong-lasae (T1073) (3 ♂ ♂, USNM). – Phu Ruea NP, Nern Pitsawong, 17°29.676'N 101°21.093'E, 1168 m, 5-12.xi.2006, ex. Malaise trap, coll: Patikhom Tumtip (T1117) (1 ♂, BPBM). – Phu Ruea NP, Nern Wibaak ditch, 17°29.907'N 101°20.483'E, 1196 m, 26.viii.-2.ix.2006, ex. Malaise trap, coll: Nukoonchai Jaroenchai (T533) (1 ♂, CNCI). – Phu Ruea NP, Nern Wibaak ditch, 17°29.907'N 101°20.483'E, 1196 m, 19-26.ii.2007, ex. Malaise trap, coll: Patikhom Tumtip (T1711) (1 ♂, QSBG). – Phu Ruea NP, Reservior, 17°28.826'N 101°21.33'E, 931 m, 5-12.i.2007, ex. Malaise trap, coll: Patikhom Tumtip (T1538) (1 ♂, NHMW). – **Phetchabun Province**, Khao Kho NP, Mix deciduous, 16°39.572'N 101°8.194'E, 171 m, 12-19.i.2007, ex. Malaise trap, coll: Somchai Chachumnan & Saink Singtong (T1394) (1 ♂, 3 ♀ ♀, CASC). – Khao Kho NP, Mixed deciduous forest at Ta Phol river, 16°32.539'N 101°2.483'E, 242 m, 26.xi.-2.xii.2006, ex. Malaise trap, coll: Somchai Chachumnan & Saink Singtong (T978) (1 ♂, MHNG). – Khao Kho NP, Mixed deciduous forest at Ta Phol river, 16°32.539'N 101°2.483'E, 242 m, 10-11.xi.2006, ex. pan trap, coll: Somchai Chachumnan & Saink Singtong (T966) (1 ♀, NHMW). – Khao Kho NP, Mixed deciduous forest at Ta Phol river, 16°32.539'N 101°2.483'E, 242 m, 12-19.xi.2006, ex. Malaise trap, coll: Somchai Chachumnan & Saink Singtong (T972) (1 ♀, USNM). – Khao Kho NP, Mixed deciduous forest at Ta Phol river, 16°32.539'N 101°2.483'E, 242 m, 9-10.xi.2006, ex. pan trap, coll: Somchai Chachumnan & Saink Singtong (T965) (1 ♂, 1 ♀, CASC). – Khao Kho NP, Mixed deciduous forest at Ta Phol river, 16°32.539'N 101°2.483'E, 242 m, 19-26.xi.2006, ex. Malaise trap, coll: Somchai Chachumnan & Saink Singtong (T975) (1 ♂, QSBG). – Khao Kho NP, Mixed deciduous forest at Ta Phol river, 16°32.561'N 101°2.479'E, 242 m, 12-19.xi.2006, ex. Malaise trap, coll: Somchai Chachumnan & Saink Singtong (T971) (1 ♂, 1 ♀, CASC). – Khao Kho NP, Mixed deciduous forest at Ta Phol river, 16°32.561'N 101°2.479'E, 242 m, 5-12.xi.2006, ex.

Malaise trap, coll: Somchai Chachumnan & Saink Singtong (T968) (2♂♂, USNM). – Khao Kho NP, Nursery, 16°52.573'N 101°8.077'E, 520 m, 26.x.-2.xi.2006, ex. Malaise trap, coll: Somchai Chatchumnan and Sa-ink Singtong (T812) (1♂, USNM). – Khao Kho NP, Nursery, 16°52.581'N 101°8.06'E, 520 m, 12-19.x.2006, ex. Malaise trap, coll: Somchai Chatchumnan and Sa-ink Singtong (T808) (1♂, QSBG). – Khao Kho NP, Savana at nursery, 16°52.568'N 101°8.104'E, 520 m, 6-7.x.2006, ex. pan trap, coll: Somchai Chatchumnan and Sa-ink Singtong (T797) (3♀♀, USNM). – Khao Kho NP, Thanthip waterfall, 16°39.087'N 101°7.777'E, 210 m, 5-12.ix.2006, ex. Malaise trap, coll: Somchai Chachumnan & Saink Singtong (T589) (1♀, BMNH). – Nam Nao NP, Tham Pra Laad Forest Unit, 16°44.963'N 101°27.833'E, 711 m, 4-5.vi.-ii.2006, ex. pan trap, coll: Noopean Hongyothi (T417) (1♂, CSCA). – Nam Nao NP, Tham Pra Laad Forest Unit, 16°44.986'N 101°27.874'E, 711 m, 31.vii.-7.viii.2006, ex. Malaise trap, coll: Noopean Hongyothi (T422) (1♀, USNM). – Nam Nao NP, Tham Pra Laad Forest Unit, 16°44.999'N 101°27.804'E, 715 m, 21-28.viii.2006, ex. Malaise trap, coll: Leng Janteab (T429) (1♂, QSBG). – **Phitsanulok Province**, Thung Salaeng Luang NP, Moist evergreen, 16°50.641'N 100°52.894'E, 557 m, 25.viii.-1.ix.2006, ex. Malaise trap, coll: Pongpitak Pranee (T572) (1♂, CSCA). – **Sakon Nakhon Province**, Phu Pha Yon NP, Channel, 16°55.639'N 104°10.748'E, 295 m, 17-23.vii.2006, ex. Malaise trap, coll: Manop Ngoyjansri & Chatree Cheaukamjan (T295) (1♀, CSCA). – Phu Pha Yon NP, Reservoir, 16°55.655'N 104°10.658'E, 280 m, 23-29.vii.2006, ex. Malaise trap, coll: Manop Ngoyjansri & Chatree Cheaukamjan (T299) (1♀, QSBG). – Phu Phan NP, Behind forest protection unit at Huay Wien Prai, 17°6.81'N 104°0.318'E, 318 m, 25.ii.-3.iii.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1693) (1♂, 3♀♀, QSBG). – Phu Phan NP, Behind forest protection unit at Huay Wien Prai, 17°6.847'N 104°0.302'E, 376 m, 17-25.ii.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1691) (1♂, 1♀♀, CSCA; 2♀♀, QSBG). – Phu Phan NP, Behind forest protection unit at Huay Wien Prai, 17°6.863'N 104°0.327'E, 387 m, 10-17.ii.2007, ex. Malaise trap, coll: Winlon Kongnara (T1689) (1♀, BPBM). – Phu Phan NP, Behind Huay Wien Prai Forest Unit, 17°6.863'N 104°0.327'E, 387 m, 8-15.viii.2006, ex. Malaise trap, coll: Vinlon Khongnara (T508) (1♂, QSBG). – Phu Phan NP, Behind Huay Wien Prai Forest Unit, 17°6.863'N 104°0.327'E, 387 m, 2-8.viii.2006, ex. Malaise trap, coll: Vinlon Khongnara (T505) (1♀, CNCI). – Phu Phan NP, Behind Huay Wien Prai Forest Unit, 17°6.863'N 104°0.327'E, 387 m, 2-8.viii.2006, ex. Malaise trap, coll: Vinlon Khongnara (T505) (1♂, QSBG). – Phu Phan NP, car park at Kam hom waterfall, 17°7.411'N 104°1.016'E, 347 m, 10-16.ix.2006, ex. Malaise trap, coll: Sailom Tongboonchai (T611) (1♀, QSBG). – Phu Phan NP, Creek at northend of Huay Nam Pung Forest Unit, 16°55.789'N 103°54.158'E, 305 m, 6-13.xi.2006, ex. Malaise trap, coll: Sailom Tongboonchai (T1096) (1♀, MHNG). – Phu Phan NP, Kam Hom waterfall at Haew Sin chai, 17°7.415'N 104°1.179'E, 347 m, 10-16.ix.2006, ex. Malaise trap, coll: Sailom Tongboonchai (T613) (1♀, QSBG). – Phu Phan NP, Nam Hom Waterfall # Sao Hi, 17°7.34'N 104°0.788'E, 344 m, 25-31.iii.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T2377) (1♀, QSBG). – Phu Phan NP, North of well, 17°3.543'N 103°58.452'E, 312 m, 11-17.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1519) (3♂♂, 3♀♀, CNCI; 1♂, 5♀♀, QSBG; 3♂♂, MHNG). – Phu Phan NP, North of well, 17°3.543'N 103°58.452'E, 312 m, 23-30.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1525) (2♂♂, 5♀♀, USNM; 2♂♂, 2♀♀, QSBG; 2♂♂, 2♀♀, CSCA). – Phu Phan NP, North of well, 17°3.543'N 103°58.452'E, 312 m, 5-11.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1516) (14♂♂, 6♀♀, USNM; 3♂♂, 3♀♀, CSCA; 3♂♂, 2♀♀, QSBG). – Phu Phan NP, West of well, 17°3.521'N 103°58.45'E, 322 m, 23-30.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1526) (3♂♂, 11♀♀, QSBG; 2♂♂, 4♀♀, MHNG; 2♂♂, 2♀♀, NHMW; 1♂, MZSP; 1♂, ZISP). – Phu Phan NP, West of well, 17°3.521'N 103°58.45'E, 322 m, 17-23.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1523) (8♂♂, 15♀♀, USNM; 3♂♂, 3♀♀, CSCA; 3♂♂, 3♀♀, QSBG). – Phu Phan NP, West of well, 17°3.521'N 103°58.45'E, 322 m, 5-11.i.2007, ex. Malaise trap, coll: Sailom Tongboonchai (T1517) (4♂♂, 2♀♀, QSBG; 4♂♂, 2♀♀, BPBM; 4♂♂, 2♀♀, CSCA; 4♂♂, 2♀♀, CNCI; 4♂♂, 2♀♀, USNM; 2♂♂, 2♀♀, BMNH; 2♂♂, 2♀♀, MHNG; 2♂♂, 2♀♀, NHMW; 2♂♂, 2♀♀, NMSA; 2♂♂, 1♀, CASC; 2♂♂, 1♀, MZSP; 2♂♂, 1♀, ZISP). – **Ubon Ratchathani Province**, Pha Taem NP, East of Thung Luang in Dipterocarpus forest, 15°39.989'N 105°30.468'E, 238 m, 14-21.i.2007, ex. Malaise trap, coll: Thongkam & Pakdee (T1481) (1♂, BMNH). – Pha Taem NP, Don Huay Can, 15°40.016'N 105°30.502'E, 246 m, 11-18.xii.2006, ex. Malaise trap, coll: Thongcome & Pakdee (T1202) (2♂♂, 2♀♀, QSBG). – Pha Taem NP, Don Huay Can, 15°40.016'N 105°30.502'E, 246 m,

25.xii.2006-1.i.2007, ex. Malaise trap, coll: Thongcome & Pakdee (T1208) (1 ♀, QSBG). – Pha Taem NP, Don Huay Sa-nhom, 15°27.435'N 105°34.838'E, 238 m, 23.v.-30.v.2007, ex. Malaise trap, coll: Sorawit Mingman (T2193) (1 ♀, QSBG). – Pha Taem NP, First tier of Huay Sa Nhom waterfall, 15°27.407'N 105°34.867'E, 230 m, 4-11.xi.2006, ex. Malaise trap, coll: Sorawit and Thongdee (T1053) (1 ♂, QSBG). – Pha Taem NP, First tier of Huay Sa Nhom waterfall, 15°27.407'N 105°34.867'E, 230 m, 25.xi.-2.xii.2006, ex. Malaise trap, coll: Sorawit and Thongdee (T1062) (1 ♂, CSCA). – Pha Taem NP, Foot of Phu Kra jeaw, 15°39.989'N 105°30.468'E, 238 m, 4-11.xii.2006, ex. Malaise trap, coll: Thongcome & Pakdee (T1200) (3 ♂ ♂, 1 ♀, QSBG). – Pha Taem NP, Huay Pok waterfall, 15°37.321'N 105°36.982'E, 419 m, 27.x.-3.xi.2006, ex. Malaise trap, coll: Pornthip Tonsu (T730) (1 ♀, NMSA). – Pha Taem NP, Huay Pok waterfall, 15°37.321'N 105°36.982'E, 419 m, 4-11.iv.2007, ex. Malaise trap, coll: Bunlu Sapsiri (T2165) (1 ♂, CNCI). – Pha Taem NP, Huay Pok waterfall, 15°37.321'N 105°36.982'E, 419 m, 13-20.x.2006, ex. Malaise trap, coll: Pornthip Tonsu (T724) (1 ♀, QSBG). – Pha Taem NP, Irrigation area west of Huay Pok forest unit, 15°37.321'N 105°36.982'E, 419 m, 6-13.x.2006, ex. Malaise trap, coll: unknown (T719) (1 ♂, 2 ♀ ♀, QSBG). – Pha Taem NP, Kua nang nee, 15°24.258'N 105°30.855'E, 193 m, 18-25.viii.2006, ex. Malaise trap, coll: Bunlu Subsiri (T469) (1 ♂, QSBG). – Pha Taem NP, Kua nang nee, 15°24.258'N 105°30.855'E, 193 m, 5-12.viii.2006, ex. Malaise trap, coll: Bunlu Subsiri (T463) (1 ♂, 1 ♀, CNCI; 1 ♂, 1 ♀, MHNG). – Pha Taem NP, Pah mhon, 15°24.304'N 105°31.258'E, 230 m, 5-12.viii.2006, ex. Malaise trap, coll: Bunlu Subsiri (T461) (3 ♀ ♀, QSBG). – Pha Taem NP, Pah mhon, 15°24.304'N 105°31.258'E, 230 m, 5-12.viii.2006, ex. Malaise trap, coll: Bunlu Subsiri (T461) (1 ♂, QSBG). – Pha Taem NP, Phu Samui foothill, 15°40.021'N 105°30.448'E, 240 m, 2-9.vi.2007, ex. Malaise trap, coll: Tongcam & Banlu (T2207) (1 ♂, 1 ♀, QSBG). – Pha Taem NP, Rong Hi Noy, 15°40.021'N 105°30.448'E, 240 m, 1-7.i.2007, ex. Malaise trap, coll: Thongkam & Pakdee (T1476) (1 ♀, QSBG). – Pha Taem NP, west of HuayPok substation, 15°37.212'N 105°36.903'E, 438 m, 18-25.iv.2007, ex. Malaise trap, coll: Bunlu Sapsiri (T2170) (1 ♀, CNCI). – Pha Taem NP, Wild flower field 1, 15°27.336'N 105°34.87'E, 232 m, 4-11.xi.2006, ex. Malaise trap, coll: Sorawit and Thongdee (T1054) (1 ♂, USNM). **VIETNAM**. – **Lam Dong Province**, 7 km W Di Linh, 860 m, 11.34N/108.01E, 03.IX.2003, P. Schwendinger (1 ♂, CAUC). – **Tay Ninh Province**, data same as holotype (6 ♂ ♂, 2 ♀ ♀, MHNG; 1 ♂, 3 ♀ ♀, CAUC).

ETYMOLOGY: The new species is named after the Entomologist Bernhard Merz who is our good friend and gives us so many kind and generous helps.

DIAGNOSIS: Frons velvety black except fronto-orbital plate shining black. Face with dense grayish white pruinosity, a black velvety basal spot between antennae, and a silvery white trapeziform pruinose spot on spherical median convexity. Antennal 1st flagellomere yellow except dorsal margin and tip brown black. A silvery white pruinose spot present between base of antenna and eye. Palpus black. Mesonotum covered by dense yellow pruinosity except two lateral margins and sutures with grayish white pruinosity, and a pair of grayish median stripes extending to posterior margin and confluent with a large black velvety spot. Wing with three white spots present between R_1 and M_1 , a white spot respectively in cells dm and cua_1 , a white luniform spot beyond $dm-cu$ and a white stripe on $dm-cu$; subcostal cell brown. Abdominal tergites 3-6 with dense grayish pruinosity along lateral margins.

DESCRIPTION

Length: Body 3.7-4.3 mm (male), 3.7-4.2 mm (female); wing 3.3-3.8 mm.

Head (Plates A2, A4) black. Frons velvety black except fronto-orbital plate shining black, wider than long and parallel-sided; a silvery white triangular pruinose spot close to inner and outer vertical setae; ocellar triangle black; *oc* strong and longer than posterior *or*; anterior *or* reclinate, shorter than posterior *or*. Face with dense grayish white pruinosity, a black velvety basal spot between antennae, a silvery white

trapeziform pruinose spot on spherical median convexity; parafacial with dense silvery white pruinosity. Gena with dense silvery white pruinosity and 1 long seta. Antennal scape and pedicel black; 1st flagellomere coniform, yellow except dorsal margin and tip brown black, 1.7 times as long as high; arista brown, long plumose, with longest setula longer than height of 1st flagellomere. A silvery white pruinose spot present between base of antenna and eye. Proboscis blackish brown, with yellowish and blackish setulae; palpus black, with blackish setulae.

Thorax (Plate A4) brownish black. Mesonotum with dense yellow pruinosity, except two lateral margins and sutures with grayish white pruinosity, and with a pair of grayish median stripes extending to posterior margin and confluent with a large black velvety spot, a pair of grayish spots on each side of a large black velvety semi-circular spot; 0+3 *dc*, anterior *dc* hair-like, slightly longer than *acr* in lateral view, and close to second *dc*; *acr* in 6 rows; *prsc* weak hair-like. Anepisternum and katepisternum with dense grayish white pruinosity; 1 *anepst*, 1 *kepst*. Scutellum brown with a large black velvety spot on basal 2/3 and a grayish white spot on each side of large black spot; distal margin silvery pruinose to black, sometimes with ground color of margin yellowish. Halter yellow.

Legs: femora blackish brown with sparse grayish white pruinosity; tibiae yellow, silvery shining on dorsal side, with an apical black ring; and all tarsomeres yellow except 3-5 pale brown. Fore femur with 3 *pv* and 6 *pd*; fore tibia with 1 preapical *ad* and 1 short *apv*. Mid femur with 5 *a*; mid tibia with 1 preapical *ad* and 2 strong *apv*. Hind femur with 2 *ad*, hind tibia with 1 short preapical *ad* and 1 short *apv*.

Wing (Plate B2) grayish with irregular whitish spots; three white spots present between R_1 and M_1 , a white spot respectively in cells *dm* and cu_{A1} , a white luniform spot beyond *dm-cu* and a white stripe on *dm-cu*; subcostal cell brown; Costa with 2nd (between R_1 and R_{2+3}), 3rd (between R_{2+3} and R_{4+5}) and 4th (between R_{4+5} and M_1) sections in proportion of 1.4 mm: 0.7 mm: 0.3 mm; *r-m* beyond middle of cell *dm*; ultimate and penultimate sections of M_1 in proportion of 1.2 mm: 1.3 mm; ultimate section of Cu_{A1} about 1/6 of penultimate.

Abdomen blackish brown, tergites 3-6 each with dense grayish pruinosity along lateral margins. Male genitalia (Figs 6-10): protandrium circular with two small ventral processes; epandrium broad; surstylus with a claviform anterior ventral process and an incision on inner side in posterior view; hypandrium Y-shaped; gonopod degenerate; aedeagus with a pair of triangular basal processes, constricted apically with a deep incision in ventral view but round and broad apically in lateral view.

REMARKS: The new species is unique in the genus by the following characters: frons velvety black except fronto-orbital plate shining black, face dense grayish white pruinose, a black velvety basal spot present between antennae and a silvery white trapeziform pruinose spot on the spherical median convexity, and a different wing pattern.

DISTRIBUTION: Thailand, Vietnam.

Dioides furcatus Shi, Li & Yang, 2009

Dioides furcatus Shi, Li & Yang, 2009: 95. Type locality: China (Hainan) (CAUC).

MATERIAL: THAILAND. – Nakhon Si Thammarat Province, Khao Luang National Park, 380 m, 8.22.45N/99.44.22E, 17. VII. 2005, P. Schwendinger (1 ♀, MHNG). – Phetchabun

Province, Khao Kho NP, Nursery, 16°52.573'N 101°8.077'E, 520 m, 19-26.x.2006, ex. Malaise trap, coll: Somchai Chatchumnan and Sa-ink Singtong (T809) (1 ♂, QSBG). **VIETNAM**. – **Lam Dong Province**, 7 km W Di Linh, 860 m, 11.34N/108.01E, 3. IX. 2003, P. Schwendinger (2 ♂♂, MHNG).

DISTRIBUTION: China (Hainan), new records to Thailand and Vietnam.

Dioides incurvatus Shi, Li & Yang, 2009

Dioides incurvatus Shi, Li & Yang, 2009: 96. Type locality: China (Yunnan) (CAUC).

MATERIAL: **THAILAND**. – **Chiang Mao Province**, Chiang Dao District outside Sūa Dao cave, 450 m, 19.23.33N/98.55.55E, 27.XII.2007, P. Schwendinger (1 ♀, MHNG).

DISTRIBUTION: China (Yunnan), new record to Thailand.

Phobeticomyia uncinata Shi, Li & Yang, 2009

Phobeticomyia uncinata Shi, Li & Yang, 2009: 62. Type locality: China (Yunnan) (CAUC).

MATERIAL: **THAILAND**. – **Chiang Mai Province**, Doi Inthanon NP, Checkpoint 2, 18°31.554'N 98°29.94'E, 1700 m, 24.xi.-1.xii.2006, ex. Malaise trap, coll: Y. Areeluck (T1870) (1 ♂, CSCA; 1 ♂, QSBG). – Doi Inthanon NP, Vachiratharn Falls, 18°32.311'N 98°36.048'E, 700 m, 29.vi.-2.vii.2006, ex. Malaise trap, coll: Y. Areeluck (T40) (1 ♂, USNM). – Doi Suthep-Pui National Park, What Phrathat, 1050m, 18.48N/98.55E, 30.XII.2005, P. Schwendinger (1 ♂, MHNG).

DISTRIBUTION: China (Yunnan), new record to Thailand.

Noonamyia bipunctata sp. n.

Figs 11-15, Plate B3

MATERIAL: HOLOTYPE ♂ (CAUC): China, Guangxi Province, Jinxiu, Dayaoshan National Nature Reserve, Longjunshan, 240-700 m, 27.32N/111.58E, 29.VII.2005, Yajun Zhu. PARATYPE: **CHINA**. – **Guangxi Province**, Jinxiu, Dayaoshan National Nature Reserve, Longjunshan, 240-700 m, 27.32N/111.58E, 29.VII.2005, Yajun Zhu (1 ♀, CAUC).

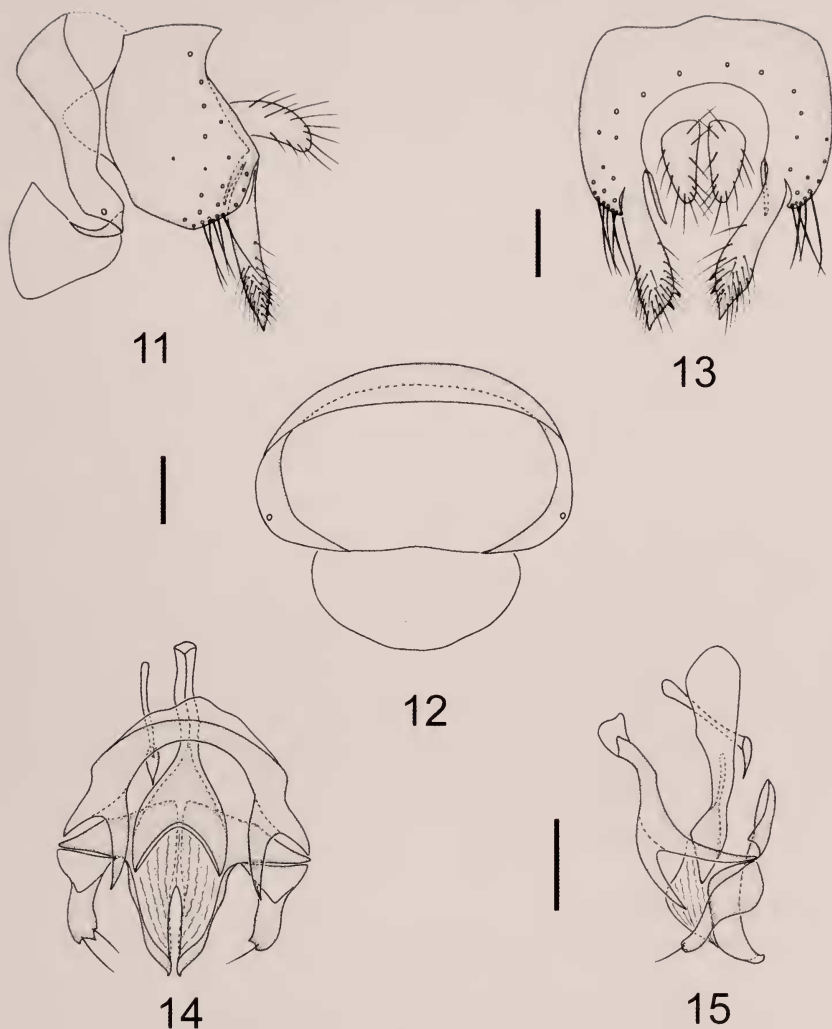
ETYMOLOGY: Latin, *bi-*, prefix meaning two + *punctata*, meaning spotted, referring to the wing with two round hyaline spots in cell r_{4+5} ; a feminine adjective.

DIAGNOSIS: Antennal 1st flagellomere yellow, except brown on apical 1/3. Palpus brown. Mid and hind femora with a pair of brown lateral spots at tip, tarsomeres 4-5 pale brown. Wing with a hyaline stripe extending downward from Costa to CuA_1 before vertical level of *r-m*, separated from a short hyaline stripe in cell cua_1 ; two round hyaline spots in cell r_{4+5} , a hyaline apical stripe between R_{4+5} and M_1 ; no spots on *r-m* and *dm-cu*; subcostal cell brown. Abdominal tergites 1-2 yellow with a brown transverse median band on tergite 2, and tergites 3-6 black.

DESCRIPTION

Length: Body 3.1 mm, wing 3.0 mm.

Head yellow. Frons about as long as wide and parallel-sided, with 2 brown stripes extending to ocellar triangle; ocellar triangle black; oc and or broken. Face pale yellow, with a pair of shining brown spots at ventral corner. Gena about 1/5 height of eye. Antenna yellow, except 1st flagellomere brown on apical 1/3, 2.0 times longer than high; arista blackish brown, plumose, with longest setula slightly longer than height of 1st flagellomere. Proboscis yellow, with yellowish and blackish setulae; palpus pale brown, with blackish setulae.



FIGS 11-15

Noonamyia bipunctata sp. n., male holotype. (11) Epandrium and protandrium, lateral view. (12) Protandrium, anterior view. (13) Epandrium, posterior view. (14) Aedeagal complex, ventral view. (15) Aedeagal complex, lateral view. Scale 0.1 mm

Thorax blackish brown except yellow on basal 1/4. Mesonotum with 0+3 *dc*, *acr* in 6 rows. 1 *anepst*, 1 *kepst*. Scutellum entirely yellow.

Legs yellow. Mid and hind femora with a pair of brown lateral spots at tip, tarsomeres 4-5 pale brown. Fore femur with 3 *pv* and 4 *pd*, ctenidium with 9 short setulae; fore tibia with 1 weak preapical *ad* and 1 *apv*. Mid femur with 4 *a*; mid tibia with 1 preapical *ad* and 2 strong *apv*. Hind femur with a row of weak *av*; hind tibia with 1 weak preapical *ad* and 1 short *apv*.

Wing (Plate B3) with a hyaline stripe extending downward from Costa to CuA_1 before vertical level of $r-m$, separated from a short hyaline stripe in cell cua_1 ; two round hyaline spots in cell r_{4+5} , a hyaline apical stripe between R_{4+5} and M_1 ; no spots on $r-m$ and $dm-cu$; subcostal cell brown; Costa with 2nd (between R_1 and R_{2+3}), 3rd (between R_{2+3} and R_{4+5}) and 4th (between R_{4+5} and M_1) sections in proportion of 1.5 mm : 0.5 mm : 0.4 mm; $r-m$ beyond middle of distal cell; ultimate and penultimate sections of M_1 in proportion of 1.0 mm : 1.1 mm; ultimate section of CuA_1 about 1/5 of penultimate. Halter pale yellow.

Abdominal tergites 1-2 yellow, with a brown transverse median band on tergite 2; tergites 3-6 black and protandrium and epandrium yellow. Male genitalia (Figs 11-15): protandrium semicircular; epandrium U-shaped in ventral view, with long setae on ventral margin; surstylus consisting of a short claviform process and a long subuliform process with three teeth and many setulae; hypandrium V-shaped with a pair of knife-like processes; gonopod short, wide with two or three teeth and one or two apical setae in ventral view; aedeagus curved apically, with a pair of triangular basal processes in ventral view; aedeagal apodeme Y-shaped, longer than aedeagus.

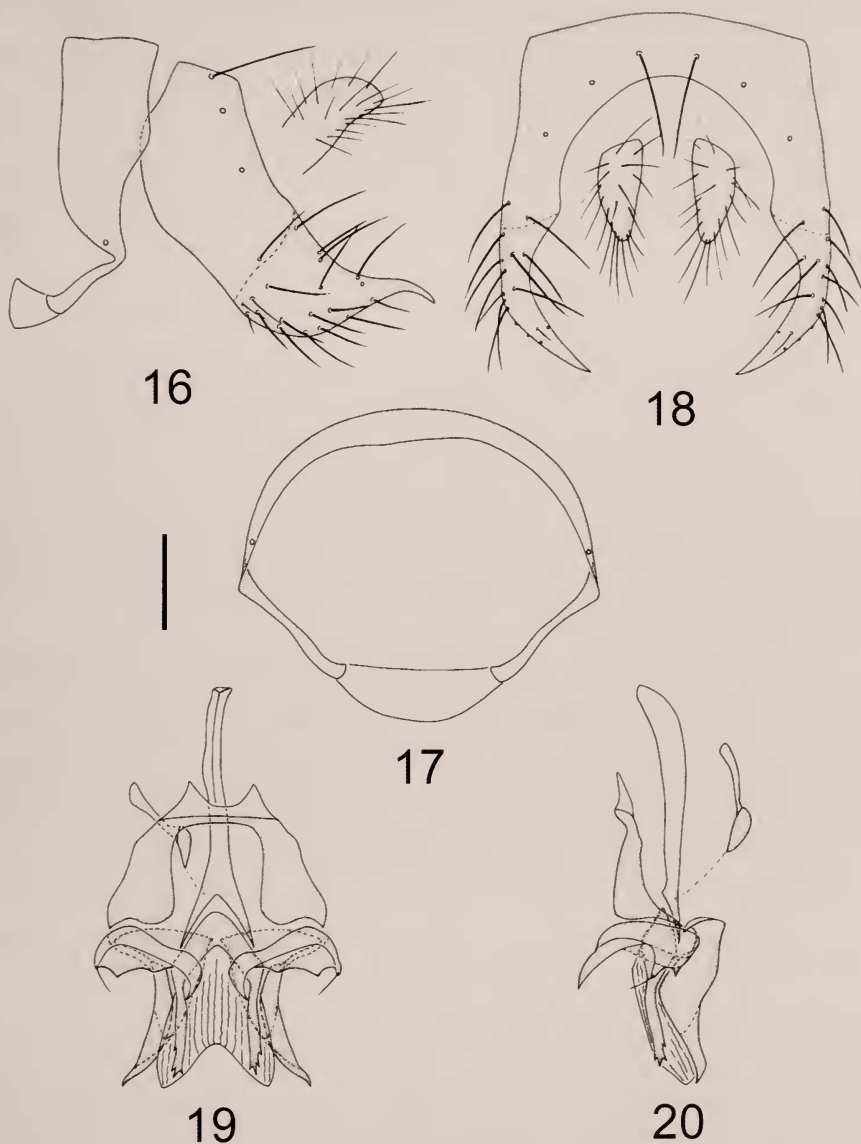
REMARKS: The new species is similar to *Noonamyia lyneborgi* Stuckenberg from the Philippines (Palawan Island) in the wing with two round hyaline spots in cell r_{4+5} , abdomen with tergites 1-2 yellow and tergites 3-6 black. But it can be separated from the latter by the fore tibia having 1 weak preapical *ad*, the wing having a hyaline stripe extending downward from Costa to CuA_1 and separated from a short hyaline stripe in cell cua_1 , the surstylus consisting of a short claviform process and a long subuliform process with three teeth and many setulae. In *N. lyneborgi*, the fore tibia has no preapical *ad*; the wing has a complete hyaline stripe extending from costal margin to posterior margin before the vertical level of $r-m$; the surstylus has a tiny apical tooth (Stuckenberg, 1971; Sasakawa & Pong, 1990).

DISTRIBUTION: China (Guangxi).

Noonamyia flavoscutellata sp. n.

Figs 16-20, Plate B4

MATERIAL: HOLOTYPE ♂ (CAUC): China, Guangxi Province, Jinxiu, Dayao Mountain, Yinshan, 1000 m, 27.VII.2005, Yajun Zhu. PARATYPES: CHINA. – Guangxi Province, Jinxiu, Dayaoshan National Nature Reserve, Longjunshan, 240-700 m, 27.32N/111.58E, 29.VII.2005, Yajun Zhu (1 ♀, CAUC). THAILAND. – Chiang Mai Province, Doi Inthanon National Park, 750 m, 26.XII.2001, P. Schwendinger (2 ♂ ♂, MHNG). – Doi Pha Hom Pok W of Fang, 1500 m, 20.02.43N/99.08.43E, P. Schwendinger (2 ♂ ♂, MHNG). – Doi Suthep-Pui National Park, Huay Khok Ma, 19.XII.2001, P. Schwendinger (4 ♂ ♂, 4 ♀ ♀, MHNG; 3 ♂ ♂, 3 ♀ ♀, USNM). – Doi Suthep-Pui National Park, nr Doi Suthep summit, 1550 m, 18.82N/98.89E, 26.X.2000, B. Merz & P. Schwendinger (3 ♂ ♂, 3 ♀ ♀, MHNG). – Doi Suthep-Pui National Park, 1420 m, 18.50.09N/98.53.47E, 18.XII.2001, P. Schwendinger (1 ♂, 1 ♀, CAUC). – Doi Suthep, Huay Khok Ma, 1300 m, 18.48N/98.55E, 26.XII.2006, P. Schwendinger (1 ♂, 1 ♀, MHNG). – Doi Suthep-Pui National Park, Palad Trail, 4-800 m, 18.79N/98.93E, 16.X.2000, B. Merz & P. Schwendinger (1 ♂, MHNG). – Doi Suthep-Pui National Park, nr Phuping Palace, 1250 m, 18.80N/98.90E, 26.X.2000, B. Merz & P. Schwendinger (4 ♂ ♂, 1 ♀, MHNG; 2 ♂ ♂, CSCA). – Doi Suthep-Pui National Park, What Phrathat, 900 m, 18.80N/98.92E, 16.X.2000, B. Merz & P. Schwendinger (2 ♂ ♂, 5 ♀ ♀, MHNG; 2 ♀ ♀, CSCA). – Doi Suthep-Pui National Park, What Phrathat, 950m, 18.80N/98.92E, 19.X.2000, B. Merz & P. Schwendinger (1 ♂, 2 ♀ ♀, MHNG; 1 ♂, 3 ♀ ♀, CAUC). – Doi Suthep-Pui National Park, What Phrathat, 1050m, 18.48N/98.55E, 30.XII.2005, P. Schwendinger (1 ♂, MHNG). – Doi Suthep-Pui



FIGS 16-20

Noonamyia flavoscutellata sp. n., male paratype. (16) Epandrium and protandrium, lateral view. (17) Protandrium, anterior view. (18) Epandrium, posterior view. (19) Aedeagal complex, ventral view. (20) Aedeagal complex, lateral view. Scale 0.1 mm.

National Park, What Phrathat, 1100m, 18.80N/98.92E, 19.X.2000, B. Merz & P. Schwendinger (2♂♂, 3♀♀, MHNG). – Doi Suthep-Pui National Park, What Phrathat, 1200m, 18.80N/98.92E, 1.XI.2000, B. Merz & P. Schwendinger (3♂♂, 2♀♀, MHNG). – Doi Suthep, 1150-1300 m, 20-28.XII.2003, P. Schwendinger (3♂♂, 6♀♀, MHNG; 1♂, 1♀, CAUC; 3♂♂, 3♀♀, CSCA). – **Lamphun Province**, Doi Khuntan National Park, 45km SE Chiang Mai, 650m, 18.50.N/99.27E,

2.XI.2000, B. Merz & P. Schwendinger (1 ♂, MHNG). VIETNAM. – Kien Giang Province, Phu Quoc Island, 250m, 10.23N/104.01E, 14-16.VIII.2003, P. Swendinger (1 ♂, MHNG).

ETYMOLOGY: Latin, *flav-*, prefix meaning yellow + *scutellata*, referring to the scutellum; a feminine adjective.

DIAGNOSIS: Antennal 1st flagellomere pale brown. Palpus brown except for pale yellow at third. Wing with a short hyaline stripe in cell cu_{a1} ; an elliptical hyaline spot in cell r_{4+5} , a semicircular hyaline apical stripe between R_{2+3} and CuA_1 , confluent with a digitiform hyaline stripe beyond *dm-cu*; a narrow pale brown stripe on *r-m*.

DESCRIPTION

Length: Body 2.1-2.8 mm (male), 2.2-2.8 mm (female); wing 3.0-3.5 mm (male), 3.0-3.3 mm (female).

Head yellow. Frons as long as wide and parallel-sided, with 2 brown stripes extending to ocellar triangle; ocellar triangle black; *oc* strong, as long as anterior *or* and anterior *or* shorter than posterior *or*. Face pale yellow, with a pair of shining brown lateral spots at ventral corner. Gena about 1/9 height of eye. Antennal scape brownish yellow, pedicel yellow and 1st flagellomere pale brown except yellow on base part of ventral margin, 1st flagellomere nearly 1.8 times longer than high; arista long plumose, black except for brownish base, with longest setula longer than height of 1st flagellomere. Proboscis yellow, with yellow and blackish setulae; palpus brown except for pale yellow at third, with black setulae.

Thorax blackish brown, slightly shining with sparse grayish white pruinosity. Mesonotum with broad yellow anterior margin; 0+3 *dc*, *acr* in 6 rows; *prsc* broken. 1 *anepst*, 1 *kepst*. Scutellum entirely yellow. Halter pale yellow except brown knob.

Legs yellow, except fore tibia slightly brownish yellow, mid and hind femora brown at tip, mid tibia brown on basal 1/2-2/3 and all tarsomeres 3-5 pale brown. Fore femur with 2 *pv* and 6 *pd*, ctenidium with 9-10 short setulae; fore tibia with 1 weak preapical *ad* and 1 *apv*. Mid femur with 4 *a*; mid tibia with 1 preapical *ad* and 2 strong *apv*. Hind femur with a row of weak *av*; hind tibia with 1 weak preapical *ad* and 1 short *apv*.

Wing (Plate B4) mostly brown, with a triangular hyaline stripe extending downward from Costa to M_1 , a short hyaline stripe in cell cu_{a1} ; an elliptical hyaline spot in cell r_{4+5} , a semicircular hyaline apical stripe between R_{2+3} and CuA_1 , confluent with a digitiform hyaline stripe beyond *dm-cu*; a narrow pale brown stripe on *r-m* and a tinged brown triangular stripe over *dm-cu*, extending to the tip of CuA_1 ; apical part of subcostal cell brown; Costa with 2nd (between R_1 and R_{2+3}), 3rd (between R_{2+3} and R_{4+5}) and 4th (between R_{4+5} and M_1) sections in proportion of 1.9 mm : 0.6 mm : 0.5 mm; *r-m* beyond middle of distal cell; ultimate and penultimate sections of M_1 in proportion of 1.0 mm : 1.0 mm; ultimate section of CuA_1 about 1/5 of penultimate.

Abdomen blackish brown, slightly shining with sparse grayish white; protandrium and epandrium yellow. Male genitalia (Figs 16-20): protandrium semicircular; epandrium U-shaped in ventral view; surstylus short, curved downward; hypandrium U-shaped, gonopod transverse broad, undulating ventral margin with 1 apical seta in ventral view; aedeagus consisting of a small incision, a pair of triangular basal processes, an arch-like ventral sclerite with apical teeth and a pair of dorsal sclerites with acute apical processes; aedeagal apodeme Y-shaped, longer than aedeagus.

REMARKS: The new species is very similar to *Noonamyia sasakawai* Papp from Thailand in the following characters: the wing has an incomplete hyaline stripe before the base of *r-m*, it lacks a round hyaline spot in cell *dm*, it has a semicircular hyaline marginal stripe between the tips of R_{4+5} and CuA_1 , the hind tibia has a short preapical *ad*, the scutellum is entirely yellow or brownish yellow, and the surstylus is acute apically and curved backward. The new species differs from *Noonamyia sasakawai* in details of the genitalia, particularly the epandrium having 3-4 long dorsal setae, and the gonopod having an undulating ventral margin and an apical seta. In *Noonamyia sasakawai*, the epandrium has 2 long dorsal setae and the gonopod is comma-like with a straight ventral margin and 1-2 subapical setae ventrally. The new species is also similar to *Noonamyia euphlebia* Sasakawa & Pong from Malaysia and Thailand in the following characters: legs with fore tibia slightly brownish yellow, mid and hind femora brown at tip and wing with an incomplete hyaline stripe before base of *r-m*. But it can be separated from the latter by the mid tibia brown on basal 1/2-2/3, the scutellum being yellow, the semicircular hyaline marginal stripe being present, and the epandrium with 3-4 pairs of dorsal setae. In *Noonamyia euphlebia*, the mid tibia is entirely brown, the scutellum is brownish black, the brown area in cell m_1 almost extends to the margin of wing but does not form a marginal stripe around to CuA_1 , and the epandrium has 5-6 pairs of dorsal setae (Sasakawa & Pong, 1990; Sasakawa, 1998).

DISTRIBUTION: China (Guangxi), Thailand, Vietnam.

Noonamyia sabahna Sasakawa & Pong, 1990

Noonamyia sabahna Sasakawa & Pong, 1990: 32. Type locality: Malaysia (Sabah).

MATERIAL: PHILIPPINES. – Mindanao, Agusan del Sur, 10 km SE San Francisco, 12.IX.1959, coll: L.W. Quate (1 sex unknown, BPBM); Misamis Oriental, Minubana, 1050-1200 m, 5-9.IV.1961, coll: H. Torrevillas (1 sex unknown, BPBM).

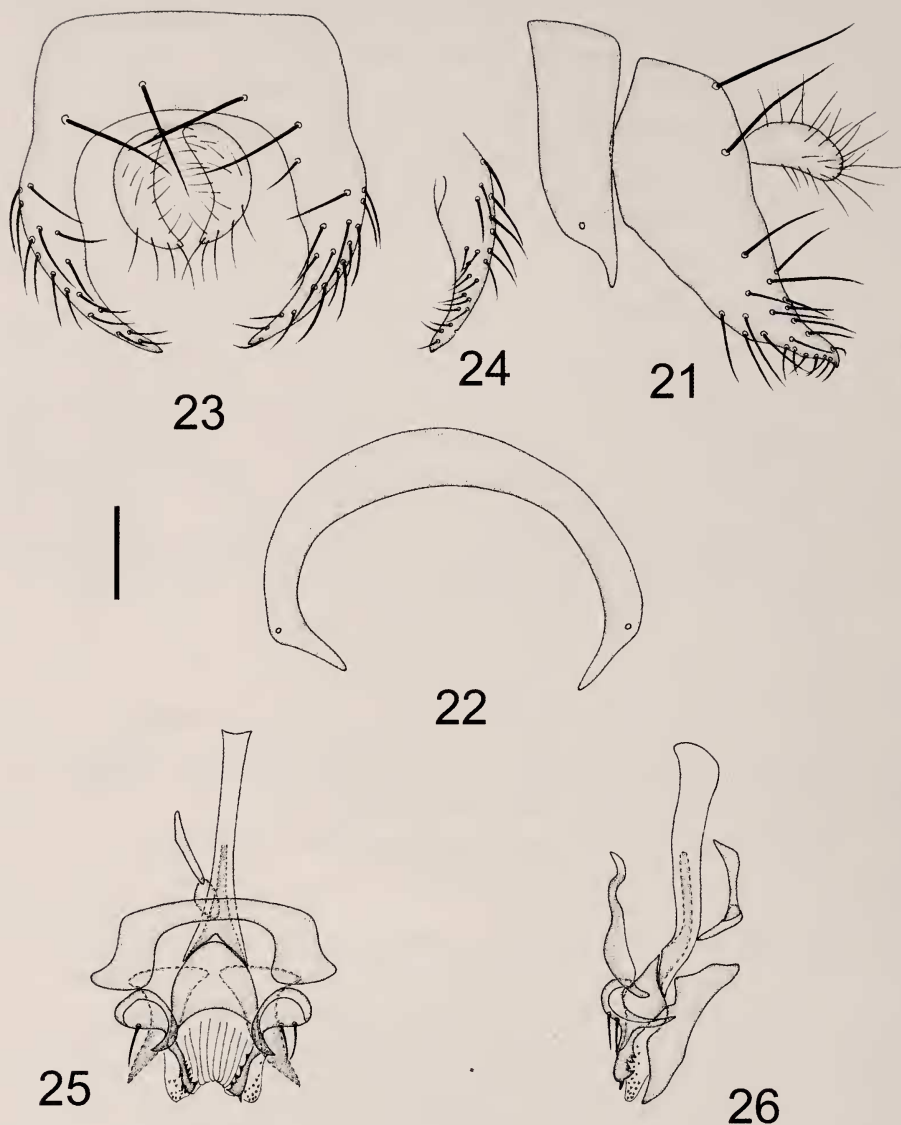
DISTRIBUTION: Malaysia (Sabah), new record to the Philippines.

Noonamyia sasakawai Papp, 2006

Figs 21-26, Plates C1-C5

Noonamyia sasakawai Papp, in Papp, Merz & Földvári, 2006: 185. Type locality: Thailand (Doi Pui).

MATERIAL: PARATYPES: **THAILAND**. – **Nan Province**, Tham Sakoen NP, 19°23'N/100°38'E, No. 17, over and along creek in forest, 26.XI.2003, M. Földvári & A. Szappanos (1♂, HNHM). – Doi PhuKa NP, No. 18, UV light, 26-27.XI.2003, L. Peregovits, M. Földvári, Á. Kőrösi, A. Szappanos & B. Maklári-Kis (1♀, HNHM). **ADDITIONAL MATERIALS: THAILAND**. – **Chiang Mai Province**, Chiang-dao, 5-11.IV.1958, T.C. Maa (1♂, BPBM). – **Loei Province**, Phu Kradueng NP, Savannah in pine forest, 16°53.092'N 101°47.413'E, 1257 m, 30-31.xii.2006, ex. pan traps, coll: Sutin Gongla-sae (T1215) (1♀, QSBG). – Phu Ruea NP, Ma Kraow ditch, 17°29.652'N 101°21.020'E, 1167 m, 5-12.xi.2006, ex. Malaise trap, coll: Patikhom Tumtip (T1116) (1♀, QSBG). – Phu Ruea NP, Ma Kraow ditch, 17°29.652'N 101°21.020'E, 1167 m, 7-8.xi.2006, pan traps, Patikhom Tumtip (T1110) (1♂, 1♀, USNM). – Phu Ruea NP, Ma Kraow ditch, 17°29.652'N 101°21.020'E, 1167 m, 8-9.xi.2006, ex. pan trap, coll: Patikhom Tumtip (T1111) (1♀, QSBG). – Phu Ruea NP, Ma Kraow ditch, 17°29.652'N 101°21.020'E, 1167 m, 10-11.xi.2006, ex. pan trap, coll: Patikhom Tumtip (T1113) (1♂, QSBG). – Phu Ruea NP, office, 17°28.826'N 101°21.330'E, 860 m, 7-8.vii.2006, ex. pan trap, coll: Patikhom Tamtip (T305) (2♂♂, CSCA). – Phu Ruea NP, Pan Hin Khan Maak ditch, 17°30.042'N 101°20.474'E, 1219 m, 6-7.ii.2007, ex. pan trap, coll: Patikhom Tumtip (T1699) (1♀, CSCA). – Phu Ruea NP, Pan Hin Khan Maak ditch, 17°30.042'N 101°20.474'E, 1219 m, 8-9.ii.2007, ex. pan trap, coll:



FIGS 21-26

Noonamyia sasakawai Papp, 2006, male paratype. (21) Epandrium and protandrium, lateral view. (22) Protandrium, anterior view. (23) Epandrium, posterior view. (24) Surstylus, anterior view. (25) Aedeagal complex, ventral view. (26) Aedeagal complex, lateral view. Scale 0.1 mm.

Patikhom Tumtip (T1701) (1♂, CSCA). – **Phetchabun Province**, Nam Nao NP, Heliport, 16°43.156'N 101°35.118'E, 890 m, 18-19.xii.2006, ex. pan trap, coll: Noopean Hongyothi & Leng Janteab (T1425) (1♀, QSBG). – Nam Nao NP, Heliport, 16°43.156'N 101°35.118'E, 890 m, 20-21.xii.2006, ex. pan trap, coll: Noopean Hongyothi & Leng Janteab (T1427) (1♂ 1♀, QSBG). – Nam Nao NP, Tham Pra Laad Forest Unit, 16°44.963'N 101°27.833'E, 711 m, 4-5.vi.



PLATE C

Noonamyia sasakawai Papp, 2006, male paratype. (1) Habitus, lateral view. (2) Mesonotum, dorsal view. (3) Wing. (4) Head, anterior view. (5) Abdomen, dorsal view.

ii.2006, ex. pan trap, coll: Noopean Hongyothi & Leng Janteab (T417) (1♀, QSBG). – **Phitsanulok Province**, Thung Salaeng Luang NP, Dry evergreen, 16°50.217'N 101°52.541'E, 580 m, 11-12.viii.2006, ex. pan trap, coll: Pongpitak Pranee (T559) (1♀, CSCA). – Thung Salaeng Luang NP, Dry evergreen, 16°50.217'N 101°52.541'E, 580 m, 13-19.viii.2006, ex. pan trap, coll: Pongpitak Pranee (T562) (1♀, CSCA). **VIETNAM**. – **Lam Dong Province**, – 6 km S of Dalat, 1550 m, 12.IX.1960, J.L. Gressitt (1♂, CSCA). Fyan, 900-1000 m, 11.VII-9.VI-II.1961, N.R. Spencer (1♂, USNM). – Di Lihn (Djiring), 27.IX-14.X.1960, C.M. Yoshimoto (1♂, BPBM). – Fyan, 1200 m, 11.VII-9.VIII.1961, N.R. Spencer (1♂, 1♀, BPBM).

DIAGNOSIS: Antenna brownish yellow, 1st flagellomere brown on apical 1/2. Palpus brown except for yellow basal 1/4. Wing with a short hyaline stripe in cell cua_1 ;

an elliptical hyaline spot in cell r_{4+5} , a semicircular hyaline apical stripe between R_{2+3} and CuA_1 ; a narrow hyaline stripe on $r-m$ and a pale brown triangular stripe over $dm-cu$, extending to the tip of CuA_1 .

DESCRIPTION

Length: Body 2.5 mm (male), 2.5 mm (female); wing 2.9 mm (male), 3.0 mm (female).

Head (Plate C4) yellow. Frons with 2 brown stripes extending from anterior margin to ocellar triangle, slightly wider than long and parallel-sided; ocellar triangle black; *oc* strong, as long as posterior *or* and anterior *or* about 1.5 times as long as posterior *or*. Face white, with a pair of shining blackish brown lateral spots at ventral corner. Gena about 1/9 height of eye. Antenna brownish yellow, 1st flagellomere brown on apical 1/2, 1.5 times longer than high; arista long plumose, black except for brownish base, with longest setula longer than height of 1st flagellomere. Proboscis yellow, with yellowish and blackish setulae; palpus brown except for yellow basal 1/4, with black setulae.

Thorax (Plate C2) blackish brown with sparse grayish white pruinosity. Mesonotum with broad yellow anterior margin; 0+3 *dc*, *acr* in 6 rows. Scutellum entirely brownish yellow.

Legs pale yellow to yellow except mid and hind tibiae brown at tip, mid tibia blackish brown on basal 1/3-1/2 and all tarsomeres 4-5 pale brown. Fore femur with 2 *pv* and 6 *pd*, ctenidium with 9-10 short setulae; fore tibia with 1 weak preapical *ad* and 1 *apv*. Mid femur with 4 *a*; mid tibia with 1 preapical *ad* and 2 strong *apv*. Hind femur with 3 *av* on apical 1/2; hind tibia with 1 weak preapical *ad* and 1 short *apv*.

Wing (Plate C3) with a triangular hyaline stripe extending downward from Costa to M_1 before vertical level of $r-m$ and a narrow hyaline stripe in cell cua_1 ; an elliptical hyaline spot in cell r_{4+5} , a semicircular hyaline apical stripe between R_{2+3} and CuA_1 ; a narrow hyaline stripe on $r-m$ and a pale brown triangular stripe over $dm-cu$, extending to the tip of CuA_1 ; subcostal cell brown at tip; Costa with 2nd (between R_1 and R_{2+3}), 3rd (between R_{2+3} and R_{4+5}) and 4th (between R_{4+5} and M_1) sections in proportion of 1.7 mm : 0.5 mm : 0.4 mm; $r-m$ beyond middle of distal cell; ultimate and penultimate sections of M_1 in proportion of 1.2 mm : 1.0 mm; ultimate section of CuA_1 about 1/3 of penultimate. Halter pale yellow except knob brown on basal 1/2.

Abdomen (Plate C5) black, with sparse grayish white pruinosity; protandrium and epandrium brownish yellow. Male genitalia (Figs 21-26): protandrium semi-circular; epandrium with two pairs of long dorsal setae in ventral view; surstylus short, curved downward with several setae; hypandrium U-shaped; gonopod comma-like with 1-2 long setae in ventral view; aedeagus consisting of a shallow incision, a pair of slender ventral sclerites with several small acute processes, membranous part with many tiny teeth and a pair of dorsal sclerites with acute apical processes; aedeagal apodeme Y-shaped, longer than aedeagus.

REMARKS: This species is very similar to *Noonamyia flavoscutellata* sp. n. and the differentiating characteristics of the two species are reflected in the key and in the remarks for the latter species.

DISTRIBUTION: Thailand, new record to Vietnam.

KEY TO SEPARATE SPECIES OF THE GENUS *NOONAMYIA* IN THE WORLD

(The following key is based on the key by Sasakawa & Pong (1990) with the new species integrated at the appropriate couplets)

- 1a Wing with a complete white stripe before *r-m*, running vertically through whole wing 2
- 1b Wing without complete white stripe before *r-m* 4
- 2a Wing with 1-2 small white round spots in cell r_{4+5} 3
- 2b Wing only with a wide white stripe in cell r_{4+5} (see Frey, 1958: fig. 11).
Distributed in Philippines *N. fascipennis* (Frey, 1958)
- 3a Wing with one white round spot in cell r_{4+5} ; katapisternum pale yellow; fore tibia without preapical *ad*; surstylus consisting of two processes (see Sasakawa & Pong, 1990: figs 5A, 6-7). Distributed in Malaysia
. *N. abdominalis* Sasakawa & Pong, 1990
- 3b Wing with two white round spots in cell r_{4+5} ; katapisternum brownish black; fore tibia with preapical *ad*; surstylus unique, with an acute apical tooth (see Stuckenberg, 1971: figs 59, 87). Distributed in Philippines *N. lyneborghi* Stuckenberg, 1971
- 4a Wing with a round hyaline spot in cell *dm*; epandrium with a short posterior process and surstylus striate (see Sasakawa & Pong, 1990: figs 5C, 8-9). Distributed in Malaysia, Philippines
. *N. sabahna* Sasakawa & Pong, 1990
- 4b Wing without spot in cell *dm*; epandrium and surstylus not as above 5
- 5a Wing without spot in cell r_{4+5} , only with two white stripes passed through cell r_{4+5} (see Frey, 1958: fig. 10). Distributed in Philippines
. *N. irregularis* (Frey, 1958)
- 5b Wing with 1-2 white round or elliptical spots in cell r_{4+5} 6
- 6a Hind tibia without preapical *ad* 7
- 6b Hind tibia with a short preapical *ad* 9
- 7a Wing with two narrow white stripes situated around *r-m* 8
- 7b Wing with a wide white stripe before *r-m* (see Okadome, 1982: fig. 1).
Distributed in Philippines *N. chujoi* Okadome, 1982
- 8a Wing with a white U-shaped spot surrounding *r-m* and a white triangular spot in cell m_1 before vertical level of a white round spot in cell r_{4+5} (see Stuckenberg, 1971: fig. 58). Distributed in Philippines
. *N. palawanensis* Stuckenberg, 1971
- 8b Wing without U-shaped spot surrounding *r-m*, a white triangular spot in cell m_1 at same vertical level with a white round spot in cell r_{4+5} (see Sasakawa & Pong, 1990: fig. 5D). Distributed in Malaysia
. *N. pleuralis* Sasakawa & Pong, 1990
- 9a Wing without white or hyaline spot or stripe on *r-m* and *dm-cu*, two white spots beyond *r-m* in cell r_{4+5} (Plate B3). Distributed in Southern China *N. bipunctata* sp. n.
- 9b Wing with white or hyaline spot or stripe on *r-m* and *dm-cu*, one white spot beyond *r-m* in cell r_{4+5} 10

- 10a Wing with a semicircular hyaline marginal stripe between tips of R_{4+5} and CuA_1 ; scutellum entirely yellow or brownish yellow 11
- 10b Wing without semicircular hyaline marginal stripe between tips of R_{4+5} and CuA_1 ; scutellum at least black or brown on basal 1/2 13
- 11a Cross vein *r-m* with a pale brown spoon-like spot; surstylus with two subuliform processes; gonopod with two acute furcated apical processes in ventral view (see Shi & Yang, 2009: figs 1, 6). Distributed in Southern China *N. bisubulata* Shi & Yang, 2009
- 11b Cross vein *r-m* without pale brown spoon-like spot; surstylus acute apically and curved backward; gonopod not as above 12
- 12a Epandrium with 3-4 long dorsal setae; gonopod with undulating ventral margin and an apical seta in ventral view (Figs 18, 19). Distributed in Southern China, Thailand, Vietnam *N. flavoscutellata* sp. n.
- 12b Epandrium with 2 long dorsal setae; gonopod comma-like with straight ventral margin and 1-2 subapical setae in ventral view (Figs 23, 25). Distributed in Thailand, Vietnam *N. sasakawai* Papp, 2006
- 13a Wing with a narrow hyaline stripe on *r-m*; gonopod acinaciform and membranous area of aedeagus with small teeth in ventral view (see Sasakawa & Pong, 1990: fig. 5B; Sasakawa, 1998: fig. 2B). Distributed in Laos, Malaysia, Thailand, Vietnam *N. euphlebica* Sasakawa & Pong, 1990
- 13b Wing with a pale brown umbrella-like spot on *r-m*; gonopod spoon-like and membranous area of aedeagus without small teeth in ventral view (see Shi & Yang, 2009: figs 2, 12). Distributed in Southern China *N. umbrellata* Shi & Yang, 2009

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REFERENCES

- FREY, R. 1958. Studien über ostasiatische Dipteren VI. Nothybidae, Micropezidae, Opomyzidae. *Notulae entomologicae* 38: 37-51.
- HENDEL, F. 1920. Neue *Cestrotus*-Arten des ungarischen Nationalmuseums (Dipter., Lauxaniidae). *Verhandlungen der zoologisch-botanischen Gesellschaft in Wien* 70: 74-80.
- MCALPINE, J. F. 1981. Morphology and Terminology—Adults (pp. 9-63). In: MCALPINE, J. F., PETERSON, B. V., SHEWELL, G. E., TESKEY, H. J., VOCKEROTH, J. R., & WOOD, D. M. (Coords), *Manual of Nearctic Diptera. Volume 1. Research Branch, Agriculture Canada, Ottawa, Monograph* 27: 674 pp.
- MEIJERE, J. C. H. de. 1910. Studien über südostasiatische Dipteren IV. Die neue Dipterenfauna van Krakatau. *Tijdschrift voor Entomologie* 53: 58-194.
- OKADOME, T. 1982. A new species of the genus *Noonamyia* Stuckenberg from the Philippines (Diptera: Lauxaniidae) (pp. 183-185). In: SATO, M., HORI, Y., OKADOME, T. (eds). Special issue to the memory of retirement of Emeritus Professor Michio Chujo. *Association of the Memorial Issue of Emeritus Professor M. Chujo, Nagoya, Japan*. 185 pp.
- PAPP, L., MERZ, B. & FÖLDVÁRI, M. 2006. Diptera of Thailand: A summary of the families and genera with references to the species representations. *Acta Zoologica Academiae Scientiarum Hungaricae* 52(2): 97-296.
- SASAKAWA, M. 1998. Oriental Lauxaniidae (Diptera). Part 1. *Scientific Report of the Kyoto Prefectural University, Human Environment and Agriculture* 50: 49-74.
- SASAKAWA, M. & PONG, T. Y. 1990. Lauxaniidae (Diptera) of Malaysia (Part 1). *Esakia, Special Issue* No. 1: 123-136.
- SHEWELL, G. E. 1987. Lauxaniidae (pp. 951-964). In: MCALPINE, J. F., PETERSON, B. V., SHEWELL, G. E., TESKEY, H. J., VOCKEROTH, J. R., & WOOD, D. M. (Coords), *Manual of Nearctic Diptera. Volume 2. Research Branch, Agriculture Canada, Ottawa, Monograph* 28: 675-1332.
- SHI, L., YANG, D. 2009. Two new species of the genus *Noonamyia* from Hainan in China (Diptera, Lauxaniidae). *Zootaxa* 2014: 34-40.
- SHI, L., YANG, D. & GAIMARI, S. D. 2009. Species of the genus *Cestrotus* Loew from China (Diptera, Lauxaniidae). *Zootaxa* 2009: 41-68.
- SHI, L., LI, W. L. & YANG, D. 2009a. Five new species of the genus *Dioides* from China (Diptera: Lauxaniidae). *Annals Zoologici* 59(1): 93-105.
- SHI, L., LI, W. L. & YANG, D. 2009b. Two new species of the genus *Phobeticomyia* from China (Diptera, Lauxaniidae). *Zootaxa* 2090: 57-68.
- STUCKENBERG, B. R. 1971. A review of the Old World genera of Lauxaniidae (Diptera). *Annals of the Natal Museum* 20(3): 499-610.